SEPTEMBER 7, 1959

PAPER TRADE JOURNAL

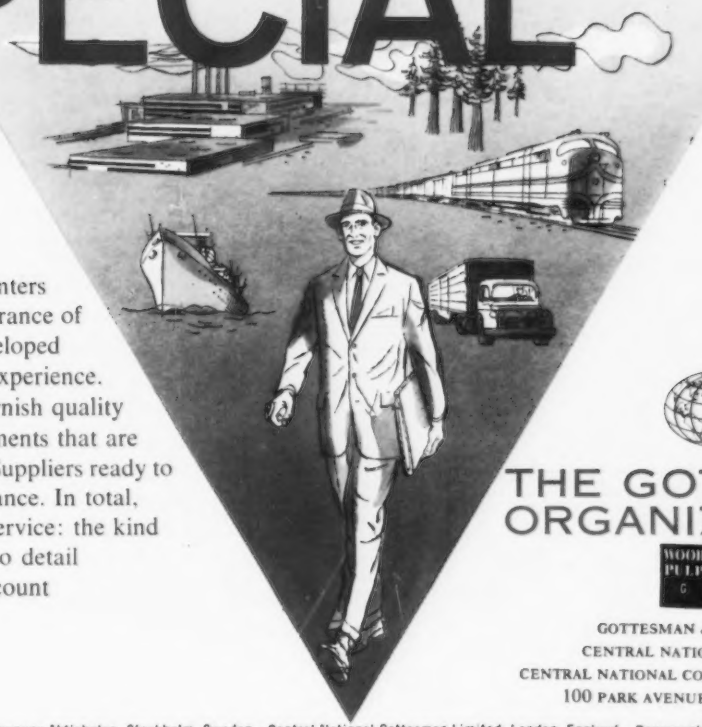
NEW PULPING PROCESS . . .

PTJ's editor talks about Stora's two-stage sulphite pulping, liquor recovery, and quality pulp.

BETTER ADHESIVE . . .

The new HDLS process for making corrugated board adhesive exhibits many advantages for the user.

YOU GET
SOMETHING
SPECIAL



...when Gottesman enters the picture! The assurance of excellent service developed by over 70 years of experience. Pulp sources that furnish quality in every grade. Shipments that are always on schedule. Suppliers ready to offer technical assistance. In total, you get Gottesman service: the kind of special attention to detail you know you can count on, every time!

THE GOTTESMAN ORGANIZATION

Established 1886

GOTTESMAN & COMPANY, INC.
CENTRAL NATIONAL CORPORATION
CENTRAL NATIONAL COMMERCIAL COMPANY, INC.
100 PARK AVENUE, NEW YORK 17, N. Y.

Gottesman & Company Aktiebolag, Stockholm, Sweden • Central National-Gottesman Limited, London, England • Representatives in 55 Leading World Markets

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313 N. First St.
Ann Arbor, Mich.

ASTEN DRYER FELTS . . . *economy in the long run*

All types for all purposes

Asbestos **Synbest®** **Syncot®**

"The Forest" Original etching by Paul Winkler-Leers from the Asten-Hill collection.

ASTEN-HILL MFG. CO., Philadelphia 29, Pa.
Walterboro, S.C.
Salem, Ore.

ASTEN-HILL LIMITED, Valleyfield, Quebec

You'll get extra strength for all your lines when you add Accostrength Resin to your process—especially in cases where critical specifications must be met.

And, Accostrength gives you 3 additional benefits...

1. Accostrength improves wet web strength—minimizes costly paper breaks in the wet end of the machine. Customer runs have proved this too.

2. Accostrength allows greater use of shorter hardwood fibres to meet strength tests. Saves you money, here!

3. Accostrength improves draining on wire—therefore requires less steam in the dryers permitting machine speedup and increased paper production. Another money saving feature!

For full information about Accostrength, write Cyanamid for Technical Bulletin #33.

AMERICAN CYANAMID COMPANY CYANAMID

PAPER CHEMICALS DEPARTMENT, 30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

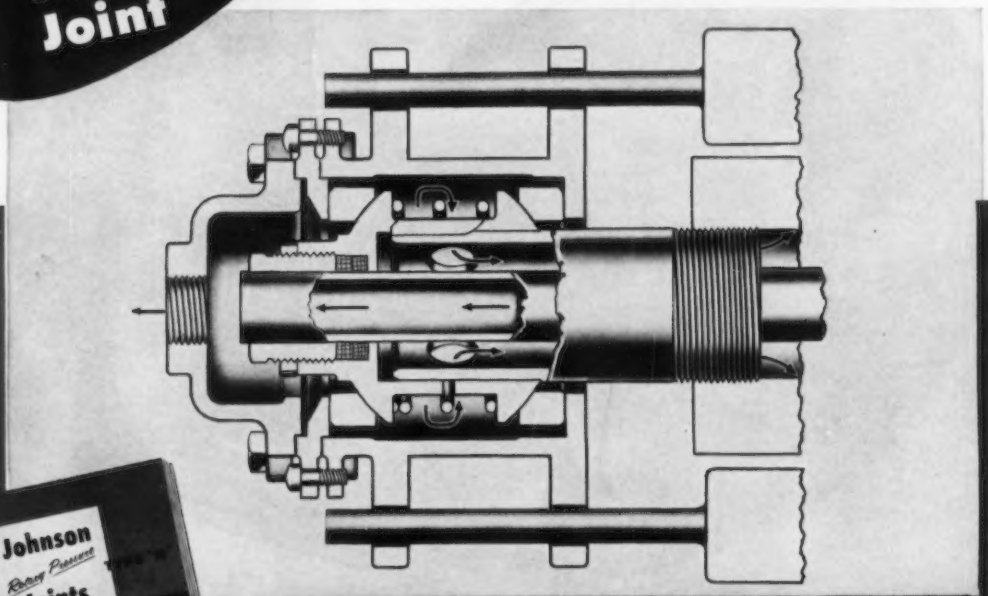
Good News for high speed paper machine dryers

The new SUPER Type L-N Johnson Joint

This one is everything the name implies. It was developed for today's heavy duty service, particularly with high speed, high pressure paper machines.

Briefly, this new SUPER Joint begins with a new "Green Streak" seal ring of greatly improved composition. It has a very hard, virtually non-porous structure. To take full advantage of its long wearing, low friction characteristics, the mating surfaces of the joint are Ni-Chrome plated.

Test installations have already proved this new SUPER construction handles soaring speeds and pressures like no other rotating joint. In terms of operating efficiency, maintenance-free service and long life it sets a new *super* standard of performance.



Type L-N SUPER Johnson Joint, for use with rotating syphon pipe. The combination of new "Green Streak" rings and Ni-Chrome plated wearing surfaces provides unusually long wearing, low friction characteristics. Rod supports carry all the weight of body and piping, permit the rotating assembly to "float" freely inside.

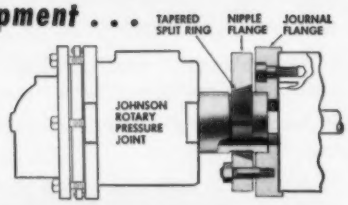
Write for Bulletin N-2002

for full data on the Super N Johnson Joint shown above. It's just off the press.

Another Johnson Development . . .

THE QUICK-RELEASE NIPPLE

Eliminates a threaded nipple; utilizes powerful wedging action between nipple flange and tapered split ring to lock nipple securely in position. Greatly simplifies installation and removal — ends danger of damaging nipple with heavy wrenches. Available for all Johnson Joints.



THE JOHNSON CORPORATION

828 Wood Street, Three Rivers, Michigan

Rotary Pressure Joints • Direct Operated Solenoid Valves

PAPER TRADE JOURNAL

PUBLISHED WEEKLY SINCE 1872

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REMEMBER THESE DATES

September 13-16. National Paper Trade Ass'n. Fall Meeting, Conrad Hilton Hotel, Chicago, Ill.

September 15-17. 9th TAPPI Corrugated Containers Conference, Jung Hotel, New Orleans, La.

September 21-23. Paper-Plastics Conference, Edgewater Beach Hotel, Chicago, Ill.

October 8-9. Deinking Conference, Roger Smith Hotel, Holyoke, Mass.

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Paper & Pulp Mills, Converters and their Personnel	1 yr.	2 yrs.	3 yrs.
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R. E. BOETSCH Director of Circulation

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Water Wash: Mobilplex EP clings to surfaces even under direct water washing; also resists mild acids, metal-working emulsions.

Heat: Mobilplex EP holds consistency, resists runout at temperatures in the range of 300 F. Can be pumped at sub-zero temperature, has low shear resistance.

Extreme-Pressure: Mobilplex EP has shown excellent results in Timken OK-Load, 4-Ball Wear and similar tests. It has unusual capacity to withstand severe shock loads as evidenced by outstanding performance in heavy-duty equipment.

LABORATORY TEST SUMMARY RESULTS
MOBILPLEX EP (M) and 5 Leading Competitive EP Greases (A,B,C,D,E)

PROPERTY EVALUATED	RATING			
	Excellent	*Good*	*Fair*	*Poor*
Heat Resistance	M	A	C,D,E	B
Service Performance	M	A,C,E	B,D	
Extreme Pressure	M ,A,C	B,D,E		
Anti-Wear	M ,A	B,C	D,E	
Rust Protection		M ,B,C, D,E		A
Water Resistance		M ,B,C	A,D,E	
Handling Properties		M ,A,B C,D,E		
Controlled Bleeding		M ,A,C	B,D,E	
Non-staining		M	A,B, D,E	C

announcing Mobilplex ep

The Multi-Service Grease with unique Calcium EP Complex. Never before in a single lubricant such a wide range of use . . . such a margin of superiority . . . such a potential for maintenance savings!*

From Mobil research comes Mobilplex EP . . . a Multi-*Service* extreme-pressure grease far superior in quality and range of applications to any multi-*purpose* grease available.

The unique Calcium EP Complex, special additives and extremely tenacious nature of Mobilplex EP, provide maximum protection against wear, rust, washout and heat. Because of its greater versatility, Mobilplex EP goes further than competitive extreme-pressure greases in simplifying your lubricant application, storage and purchasing problems. This new-type lubricant has given industrial machines greater protection while replacing as many as seven other greases. Mobilplex EP has all of the advantages usually associated with EP greases—as well as excellent storage, structural and oxidation stability.

Examination of the laboratory summary at left shows that in comparison with five leading extreme-pressure lubricants Mobilplex EP is the *only* grease excellent or good in every grease quality tested. No wonder aluminum and steel plants, forging and metal-drawing shops, the cement, chemical and rubber industries, steel and paper mills are reporting dramatic success with Mobilplex EP.

For full details contact your Mobil representative.

Mobil

**Multi-Service means ideal for all types of anti-friction and plain bearings under all normal operating conditions (temperatures in the range of 300 F.) and for all types of dispensing equipment.*

Proved Petroleum Products . . . Available with a Mobil Program of Correct Lubrication

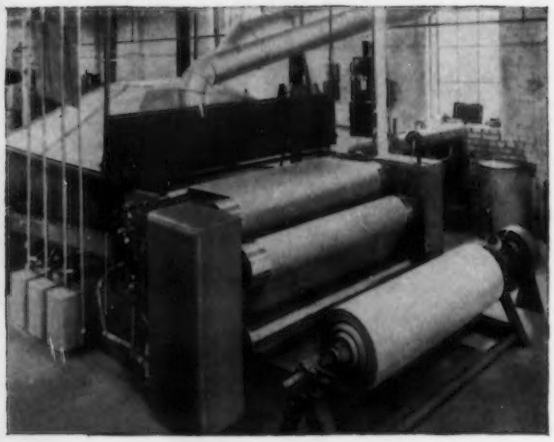
WEB PROCESSING

...a business we got into much more than 100 years ago.

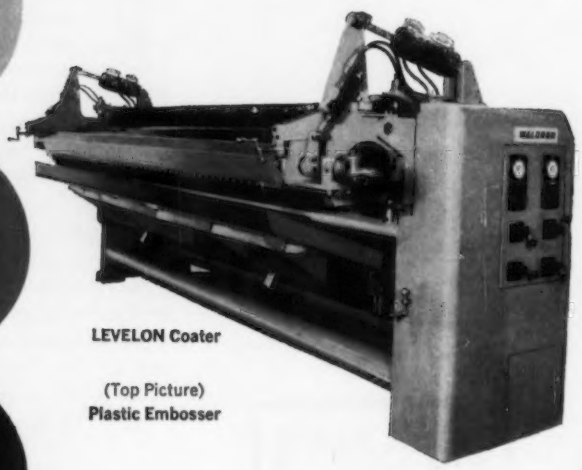
WALDRON EQUIPMENT

...as modern as the year 1959 is on the calendar because all Waldron Web-Processing Machinery is custom made for each order, thus embodying the latest in design based on proved principles of operation.

WALDRON



EQUIPMENT



LEVELON Coater

(Top Picture)
Plastic Embosser

The whole story of Waldron Service to the Web Processing field is covered briefly on this page... Experience, Design Skill and Service. Full details are given in our new 128 page General Catalog No. 10, which we shall be glad to send on request.

Wouldn't the next logical step be for you to discuss your plans for expanding production or modernizing your plant setup with new units or an entirely new line with a Waldron engineer?

WEB PROCESSING MACHINERY

COATERS
EXTRUDER-COATERS
LAMINATORS
EMBOSSERS
IMPREGNATORS
PRINTERS

AUXILIARY EQUIPMENT

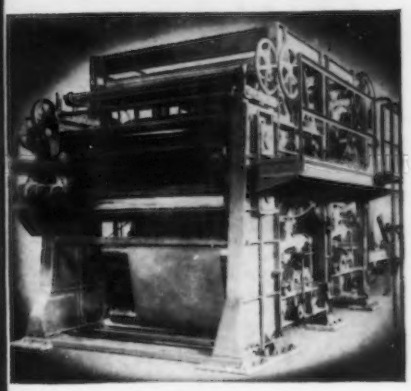
COOLING AND HEATING ROLLS
DRYERS, FUSERS
EXPANDING LEAF MANDRELS
MOISTENING AND REHUMIDIFYING UNITS
ABRASIVE GRIT APPLICATORS
CUTTING OR SPLICING UNIT
BRUSHING UNIT

MECHANICAL EQUIPMENT

UNROLLS, UNWINDS, REWINDS
TENSION CONTROLS
WRINKLE CONTROLS
WIDTH CONTROLS
EDGE GUIDES
TRIMMERS, CONVEYORS, SLITTERS, SHEETERS

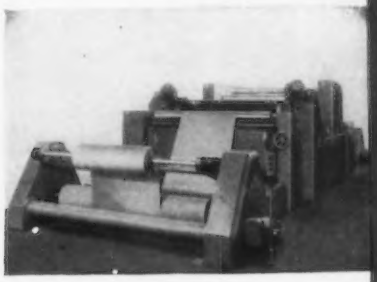
MISCELLANEOUS PROCESSING EQUIPMENT

PULP SHREDDING MACHINERY
PLASTIC TUBE WINDING EQUIPMENT
SPECIAL PACKAGING LINES
INSPECTION AND REWINDING TABLES
WEB COLLATING
CUTTING AND FOLDING EQUIPMENT
GUMMED PAPER BREAKERS



Five Web Wet Laminator

MICROJET Air Blade Coater (medium duty)



Waxing Line

M-R

THE MIDLAND-ROSS GROUP OF COMPLEMENTING SERVICES

J. O. Ross Engineering, New York
John Waldron Corporation, New Brunswick, N. J.
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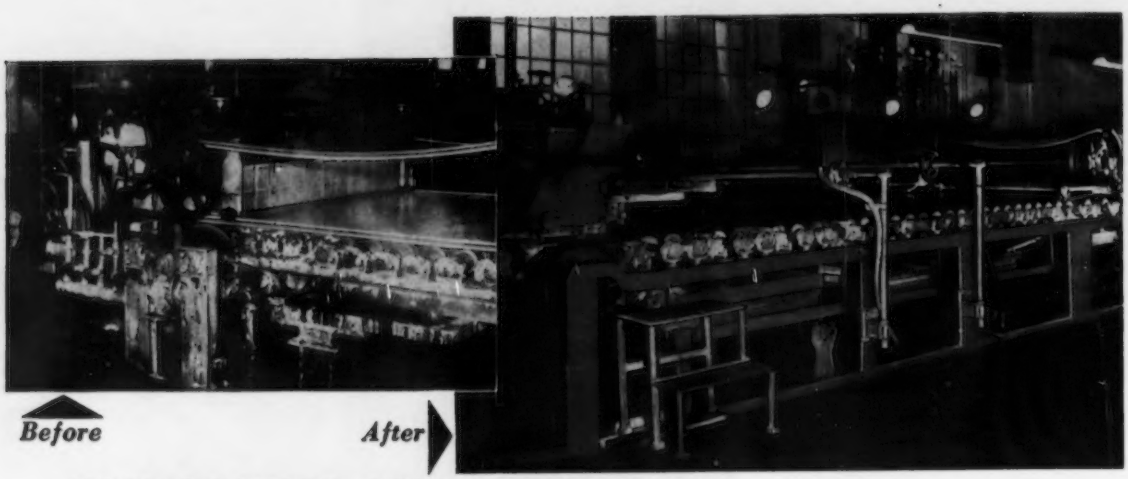
5270 EAST WASHINGTON BOULEVARD, LOS ANGELES 22, CALIFORNIA

REPLACE MACHINE PARTS NOW!

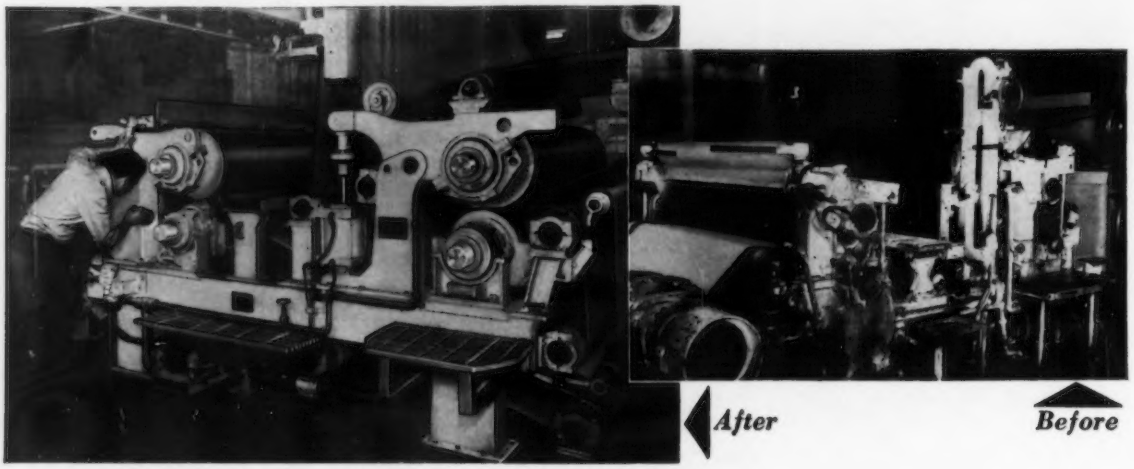
• for better product • for higher output • for lower costs



Before *After*

FOURDRINIER REPLACEMENT

In the breast roll area, it was necessary to remove Pond Plates to change the wire, and there was always the great hazard of wire damage in the process. Now, in the Sandy Hill replacement, wire change time has been cut 65%, operation is smoother, power consumption lower, bearing life longer and the wire is safe against damage. Note also larger white water pans.



After *Before*

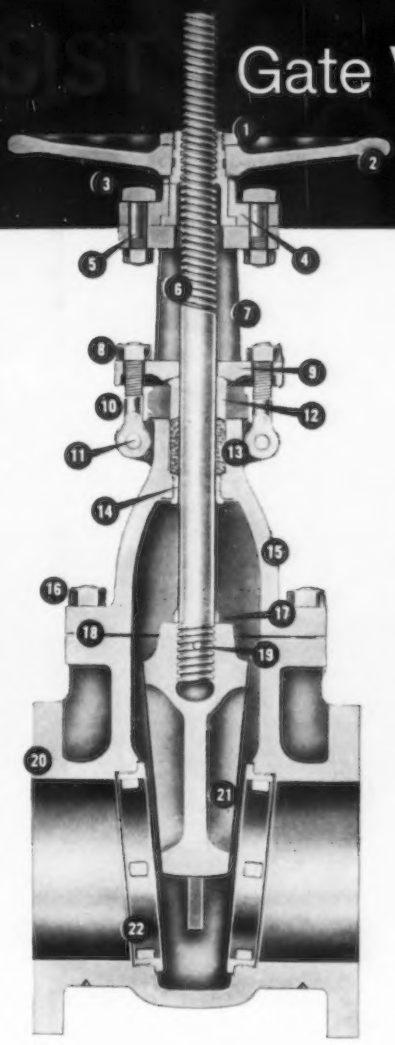
PRESS SECTION REPLACEMENT

This 50 year old press section was struggling along with bronze bushings, old stretches, inadequate rolls and uneven top roll loading. The new Sandy Hill section which replaced it has anti-friction bearings, adequately designed press rolls, finely controlled pneumatic loading, box type framing, sturdy stretches and new felt roll alignment, which reduced power consumption, increased felt life and cut down-time substantially.

THE
SANDY HILL
IRON AND BRASS WORKS
HUDSON FALLS, N. Y.

Write for Section I, Sandy Hill Centennial Catalog, entitled "Sandy Hill Fourdrinier Machines"

You extend valve life in Corrosive and Erosive services TWO WAYS when you Specify for Gate Valves, too



No. 1... when you specify "Jenkins" you get not merely "Ni-Resist" metal but you get Type 2 Ni-Resist Cast Iron! That affords extra resistance to acids, salt and alkaline solutions, sea water, brine and other corrosive and erosive fluids, vapors or gases. It is copper-free and will not contaminate or discolor the materials controlled.

Type 316 Stainless Steel is used for the wedge, spindle and other trimmings to give you a combination of metals which have remarkable ability to withstand destructive service.

No. 2... you get all the excellence which the Jenkins Diamond trademark has represented for nearly a century. The superior design and construction are visible here. Equally important superiorities which show up only in the records of long service and low maintenance are the close grain and high density of Jenkins castings ... the precision of Jenkins machining ... the rigid inspection and testing which every Diamond-marked valve undergoes.

It costs no more to buy Ni-Resist Gates made by Jenkins. And, it may cost much less to USE them. Write us, or ask your Jenkins Distributor for information folder No. 205.

1 Bronze yoke bushing nut
2 Handy grip iron wheel
3 Bronze yoke bushing
4 Iron yoke cap with zerk fitting for lubricating bushing
5 Steel yoke cap bolts and nuts
6 TYPE 316 STAINLESS STEEL spindle
7 NI-RESIST CAST IRON, TYPE 2, yoke
8 Bronze eye bolt nuts
9 Malleable iron gland flange
10 Steel gland eye bolts
11 Steel gland lug bolts and nuts
12 TYPE 316 STAINLESS STEEL gland
13 Teflon impregnated asbestos packing
14 TYPE 316 STAINLESS STEEL bonnet bushing
15 NI-RESIST CAST IRON, TYPE 2, bonnet
16 Steel bonnet bolts and nuts
17 TYPE 316 STAINLESS STEEL spindle ring
18 Asbestos gasket
19 TYPE 316 STAINLESS STEEL wedge pin
20 NI-RESIST CAST IRON, TYPE 2, through-port body
21 TYPE 316 STAINLESS STEEL solid I-beam wedge
22 TYPE 316 STAINLESS STEEL seat rings

JENKINS
LOOK FOR THE JENKINS DIAMOND
VALVES
JENKINS SINCE 1864 Jenkins Bros

Sold Through Leading Distributors Everywhere

JENKINS BROS., 100 Park Avenue, New York 17, N. Y.

Send folder No. 205 describing Ni-Resist Gate Valves

Name & Title .....

Company .....

Address .....

SEVEN YEARS AGO

Bauer Centri-Cleaners introduced new ideas about making clean paper

Imitated in appearance but never equalled in efficiency and length of service—that's the story of Bauer Centri-Cleaners since their first installation in 1952.

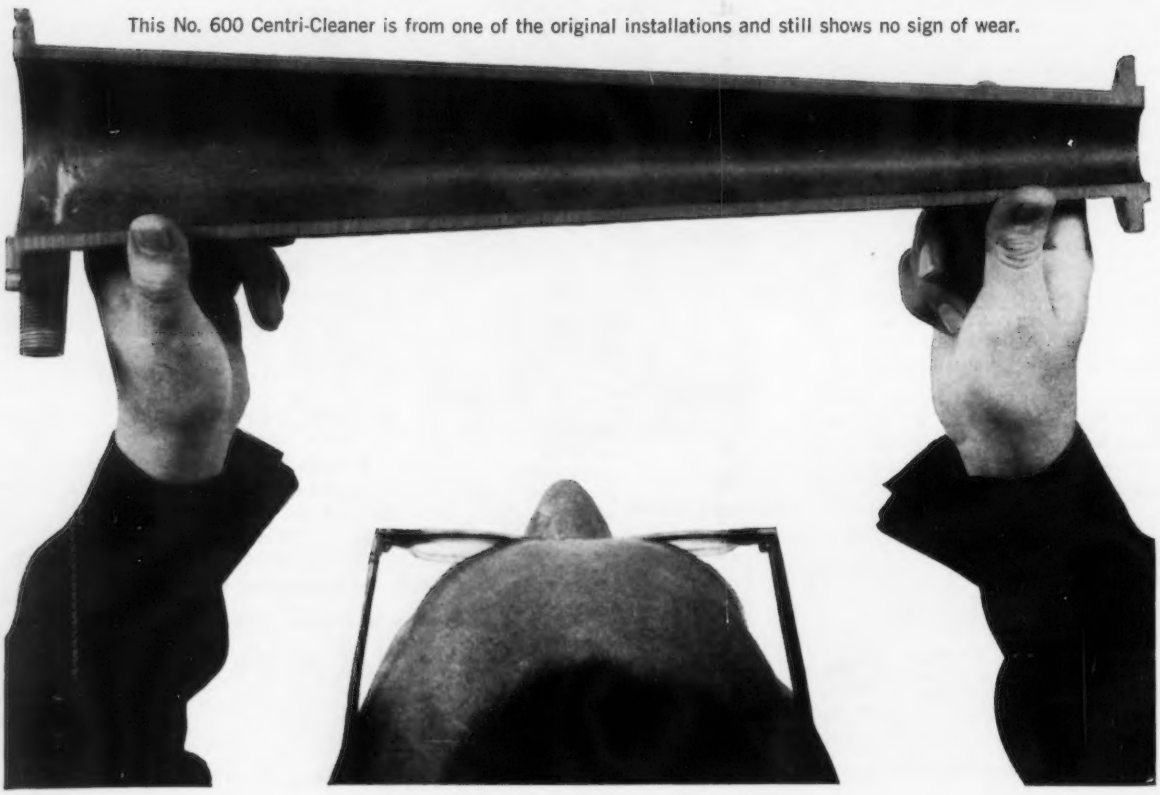
Cleanliness figures from hundreds of mills, plus results from tough, impartial tests on all kinds of pulp, prove their value in cleaning pulp and furnish to the highest degree possible.

The many original installations still in use attest to the durability and know-how built into every unit.

If cleaner paper or board is your aim, ask the Bauer man about the Centri-Cleaner best for your needs. For a quick glance at our complete line, ask for Bulletin P-4-D.

The Bauer Bros. Co., 1758 Sheridan Ave., Springfield, Ohio

This No. 600 Centri-Cleaner is from one of the original installations and still shows no sign of wear.



ANNOUNCING
Special Products for the Paper Industry . . .

ACRI-FLO 151

A NEW EASY-PROCESSING LATEX FOR SATURATED-PAPER MANUFACTURING

Here's an efficient saturating latex developed for specialty-type paper applications and coatings, where outstanding pigment-binding characteristics, barrier properties, gloss and flexibility are essential. In addition to having excellent UV heat and light stability, Acri-Flo 151 securely binds individual fibers, adding superior lateral strength to saturated papers.

An ideal top coat and a "super" saturant, this carefully balanced styrene-acrylic latex has been critically tested and fully approved by leading manufacturers in the paper industry. Send now for generous samples and technical data on this remarkable new product. See for yourself how it can help improve even the finest of papers.

ACRI-FLO® 151

Specifications

Total Solids Content	47 ± 1.0
pH	8.0 ± 0.5
Surface Tension	30-36 dynes/cm.
Viscosity (Brookfield at 25°)	150 ± 50
Mechanical Stability	Excellent

Physical Properties

Specific Gravity	1.01
Weight/gal.	8.43 pounds
Refractive index (D^{25C})	1.530
Film properties	Clear and glossy
Adhesion	Excellent
Particle size	900 Angstroms 0.09 Microns

GEN-FLO® 62 styrene-butadiene latex for casein or starch coating formulations

Specifications

TSC, % by weight	48 ± 1.0
pH	10 ± 1
Surface Tension (dynes/cm)	28-32
Residual styrene, %	0.05 max.
Brookfield Viscosity, cps	15-25
Mechanical Stability	0.1 max 100 mesh screen

Adds these ADVANTAGES

- Superior brightness
- Better pick resistance
- Higher ink receptivity
- Improved smoothness
- Higher gloss

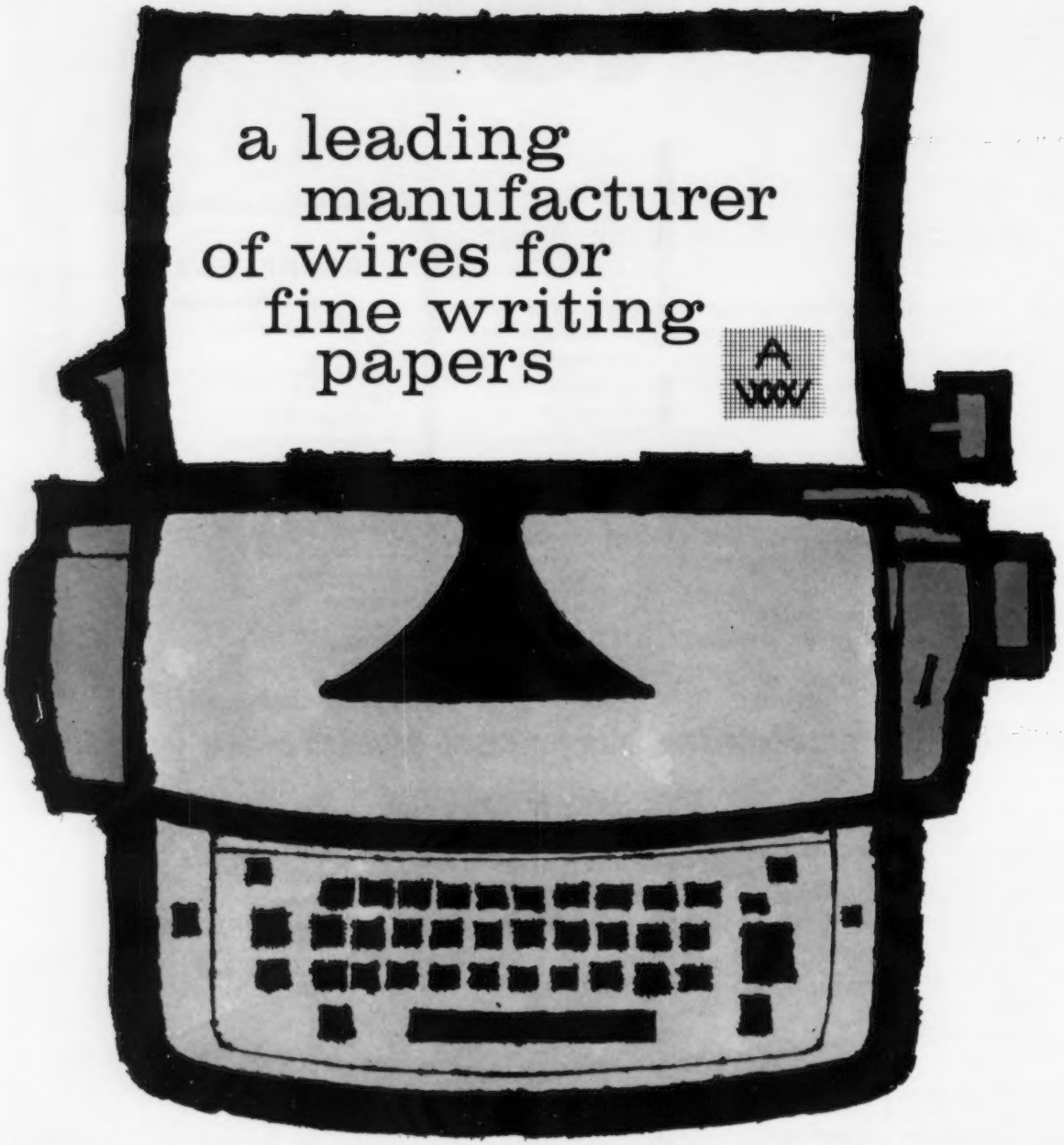
Physical Properties

Specific Gravity—Latex	1.01
Lbs/gal—Latex	8.45
Specific Gravity—solids	1.02
Lbs/gal—solids	8.51
Particle size—Angstroms	1500-1800
Dilutibility with water	infinite
Shelf Life—Excellent—No separation	

Chemical Division GENERAL THE GENERAL TIRE & RUBBER CO. GEN-FLO®

THE GENERAL TIRE & RUBBER COMPANY
CHEMICAL DIVISION · AKRON, OHIO
Creating Progress Through Chemistry

APPLETON
WIRES
ARE
GOOD
WIRES



APPLETON WIRE WORKS CORP., PLANTS AT APPLETON, WIS. AND MONTGOMERY, ALA.: INTERNATIONAL WIRE WORKS, MENASHA, WIS. AN AFFILIATED COMPANY

STEPHENS-ADAMSON

Operator's platform permits access to controls for regulating direction and elevation of discharge from S-A thrower unit.

3200 tons of "noodle" pulp are handled per day on this system.

SPEEDS HANDLING OF PULP IN THE PAPER INDUSTRY!

The STEPHENS-ADAMSON stacker belt conveyor with a centrifugal thrower unit attached to its discharge end, is part of a pulp handling system in operation at the Antioch, California plant of the Crown Zellerbach Corp. The Centrifugal thrower unit which can be rotated nearly 180 degrees to either side of the conveyor, speeds handling of the dried wood pulp or "noodles" and permits stacking over a wide storage area with a minimum of stacker movement. This unique installation typifies the kind of engineering ingenuity STEPHENS-ADAMSON has demonstrated in its close association with the pulp and paper industry during the past half-century.

- Drag and Chain Conveyors
- REDLER Conveyor-Elevators
- Circular Bin Dischargers
- Rotary Plate Feeders
- Belt Conveyors
- Centrifugal Thrower Units

Write for literature on the products listed above.

WRITE FOR BULLETIN 655

S-A
MATERIALS HANDLING PRODUCTS
SEALMASTER® BALL BEARING UNITS

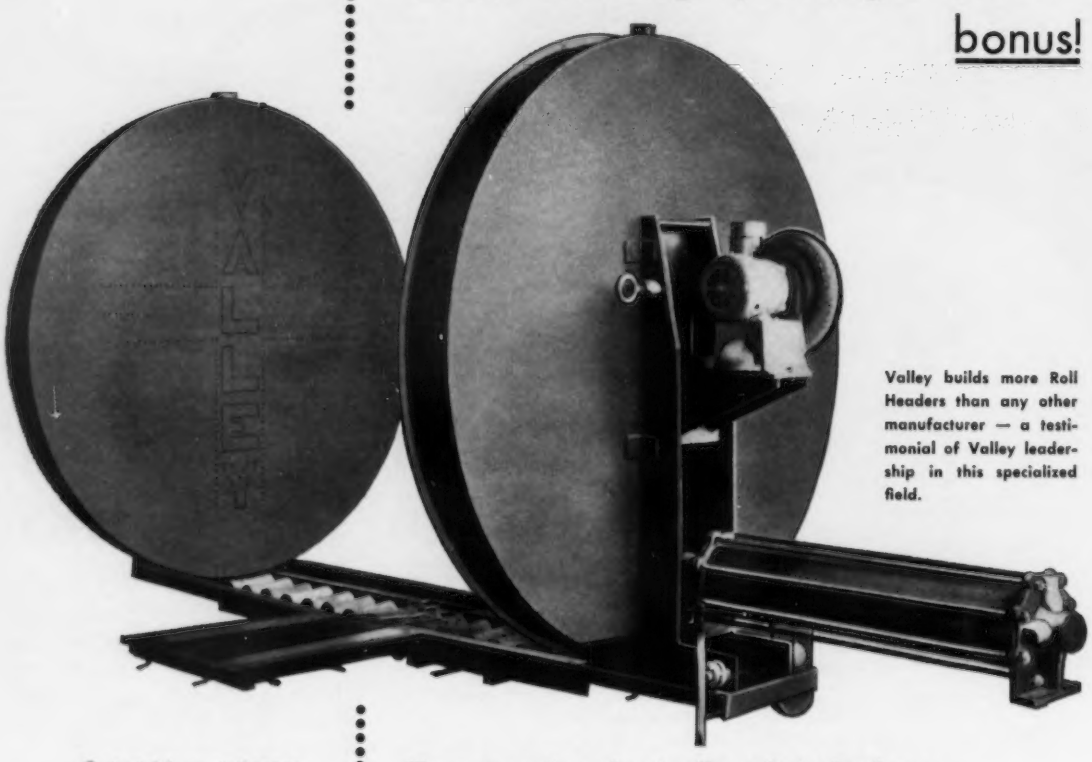
ENGINEERING DIVISION
STEPHENS-ADAMSON MFG. CO.
GENERAL OFFICE & MAIN PLANT, 42 RIDGEWAY AVENUE, AURORA, ILLINOIS

PLANTS LOCATED IN: LOS ANGELES, CALIFORNIA • CLARKSDALE, MISSISSIPPI
BELLEVILLE, ONTARIO

VALLEY

ROLL HEADERS

cut costs . . . and give you a better-looking "package" as a bonus!



Valley builds more Roll Headers than any other manufacturer — a testimonial of Valley leadership in this specialized field.

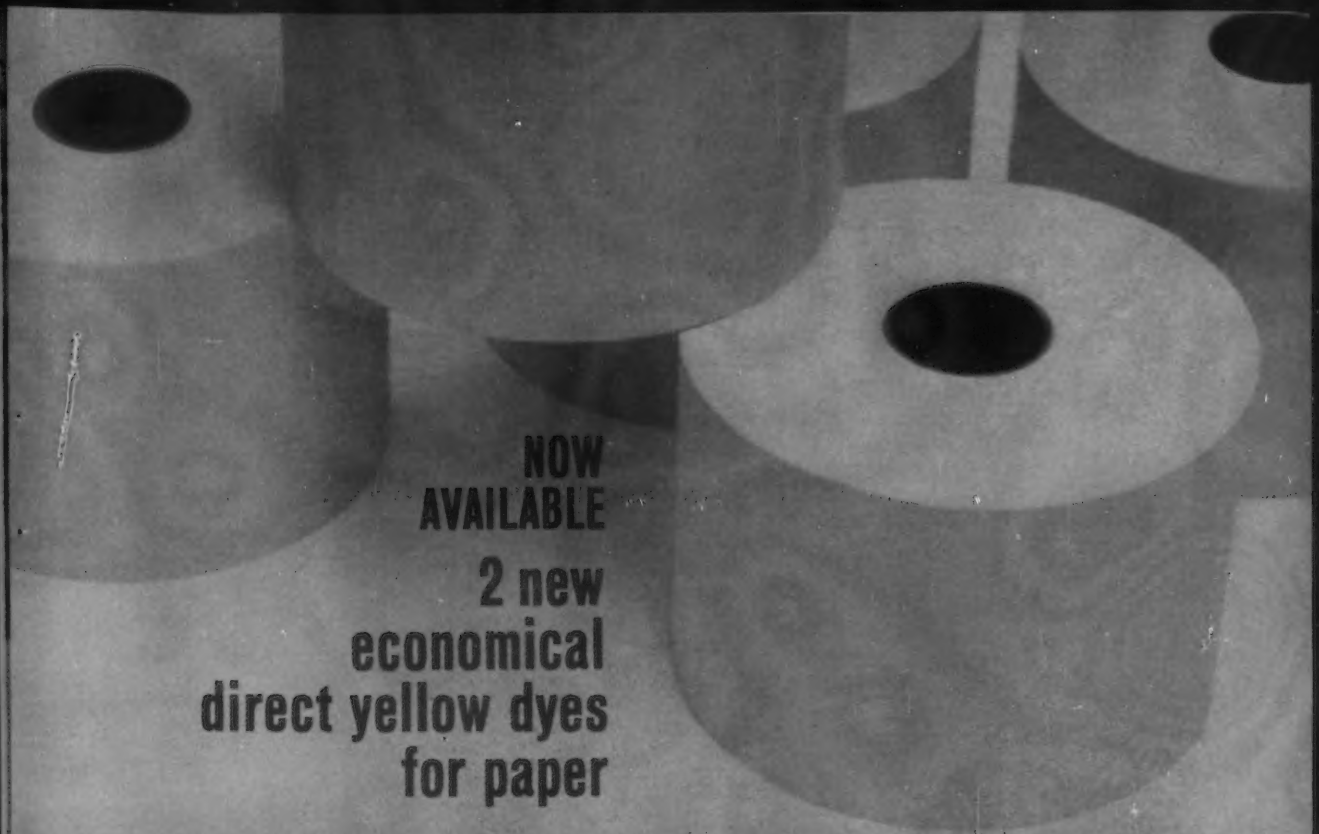
- Portable or stationary units.
- Any desired size.
- Available with automatic operation for high production.
- Furnished with or without scale.
- Cold, steam or electrically heated platens.

There was a time when heading rolls by hand was standard procedure. Today it is very costly. It is costly because Valley Roll Headers are effecting savings all the way up to 40% . . . and turning out a much more attractive "package" besides. It's a two-way benefit!

We have installations throughout the U.S.A., handling many different kinds of paper and different size rolls. Just drop us a line requesting the full story on Valley Roll Headers . . . and what they can do for you.

VALLEY IRON WORKS CO., Appleton, Wisconsin

Canadian Representative: Pulp and Paper Mill Accessories Ltd.,
P. O. Box 850, Station "O" Montreal 9, Quebec



NOW AVAILABLE

2 new economical direct yellow dyes for paper

FASTUSOL® YELLOW RP
FASTUSOL® YELLOW RG

The dyes used in the coloring of paper add considerably to the cost of the finished sheet. GDC has now developed two new, low-cost, non-dusting direct yellows which offer all the benefits of a premium direct dye at minimum expense.

These new FASTUSOL YELLOWS produce extremely light-fast and bright greenish-yellow shades of the highest degree of even-sidedness. They are ideal for coloring all types of paper—bond, ledger, cover, text, etc.—both sized and unsized.

FASTUSOL YELLOW RP and RG are readily bleached with chlorine for simplified re-use of broke. They can be added dry to the beater without danger of showing color specks. They show no indication of burning-out or migration, hence being eminently suitable for coloring board dried at high temperature.

Try these dyes now in your furnish. The quality of our dyes is backed by the finest skilled technical service and prompt deliveries.

Write or call our nearest sales office for samples and additional information.

From Research to Reality

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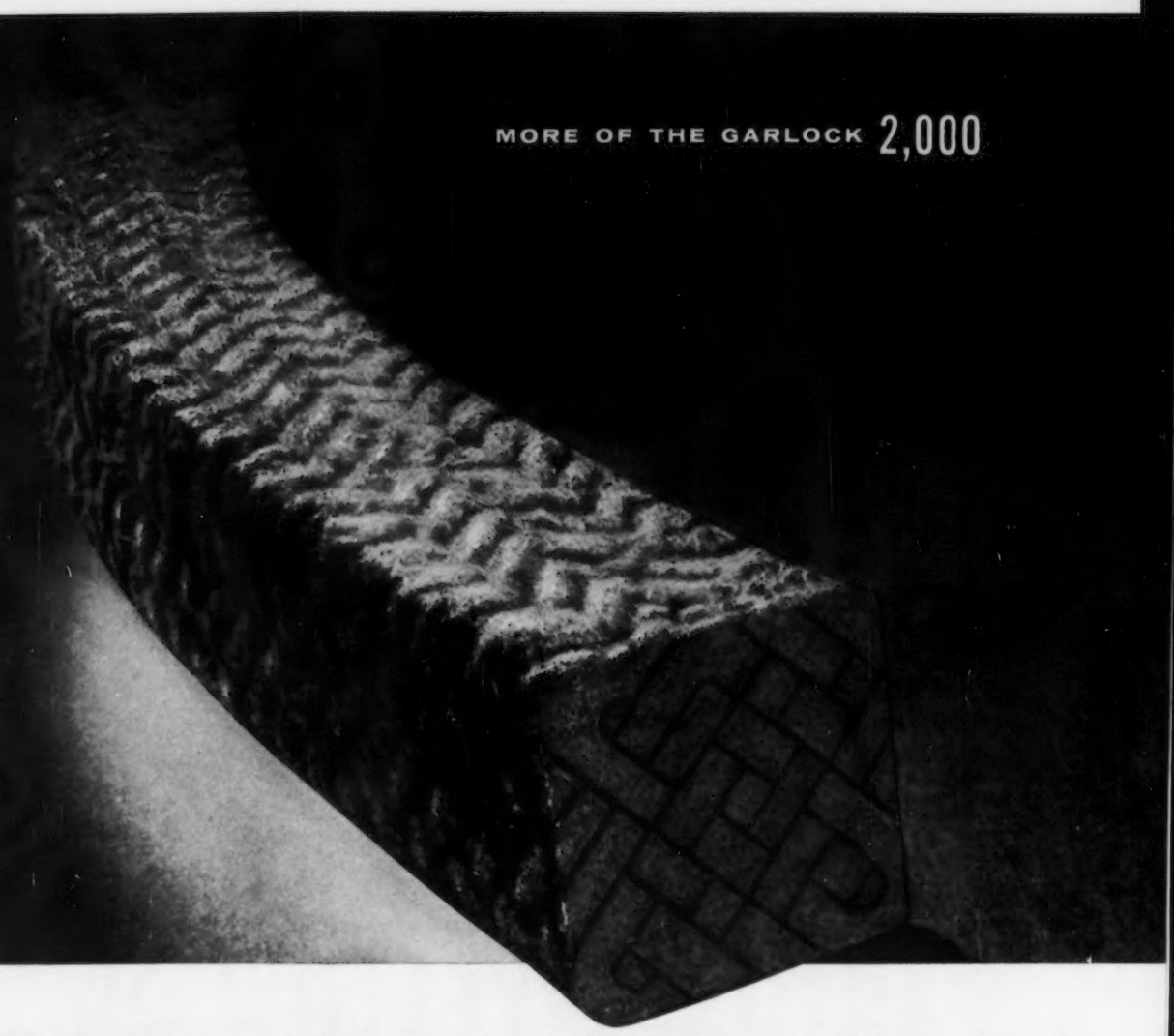
FASTUSOL YELLOW RP AND RG, MANUFACTURED BY GENERAL ANILINE & FILM, ARE SOLD OUTSIDE THE UNITED STATES AND CANADA UNDER THE TRADENAMES, "FERANIL® YELLOW RP AND RG," BY DISTRIBUTORS ALL OVER THE WORLD.

MORE OF THE GARLOCK 2,000



Replacement Costs and Downtime Minimized with GARLOCK LATTICE-BRAID* TEFLON† Packings

LONGER PACKING LIFE, Garlock LATTICE-BRAID Packings employ a through-and-through braiding construction. As illustrated above, each strand passes diagonally through the packing body at a 45° angle. This unique construction makes a completely unified structure, resulting in greater strength. And, since there is no single outer braid or cover to wear through, Garlock LATTICE-BRAID will wear far beyond the limits of ordinary packings. Less gland pressure is required to effect an adequate seal, resulting in longer sleeve and packing life, less downtime and maintenance.

LATTICE-BRAID PACKINGS OF PURE TEFLON YARN reduce process shutdowns wherever severe operating conditions are encountered. They are recommended for use on high-speed centrifugal pump shafts, reciprocating rods and valve stems against acids, caustic solutions, edible liquids, paper pulp and other products for which non-contamination is a requisite. The chemically inert Teflon yarn is non-contaminating, tough, yet resilient for effective sealing, and provides cooler operation under extreme temperatures (+500°F) and resistance to chemical exposure.

LATTICE-BRAID ASBESTOS PACKINGS WITH TEFLON IMPREGNATION reduce friction and assure effective sealing with less gland pressure. Style 5861 is recommended for service against edible products, paper pulp and other products where non-contamination is important.

LATTICE-BRAID Packings are another important part of the Garlock 2,000 . . . two thousand different styles of packings, gaskets, and seals for every need. The only complete line. See your local Garlock representative, or write for LATTICE-BRAID Folder AD-131.

THE GARLOCK PACKING COMPANY, Palmyra, N. Y.

FOR PROMPT SERVICE, contact one of our 26 sales offices and warehouses throughout the U. S. and Canada.

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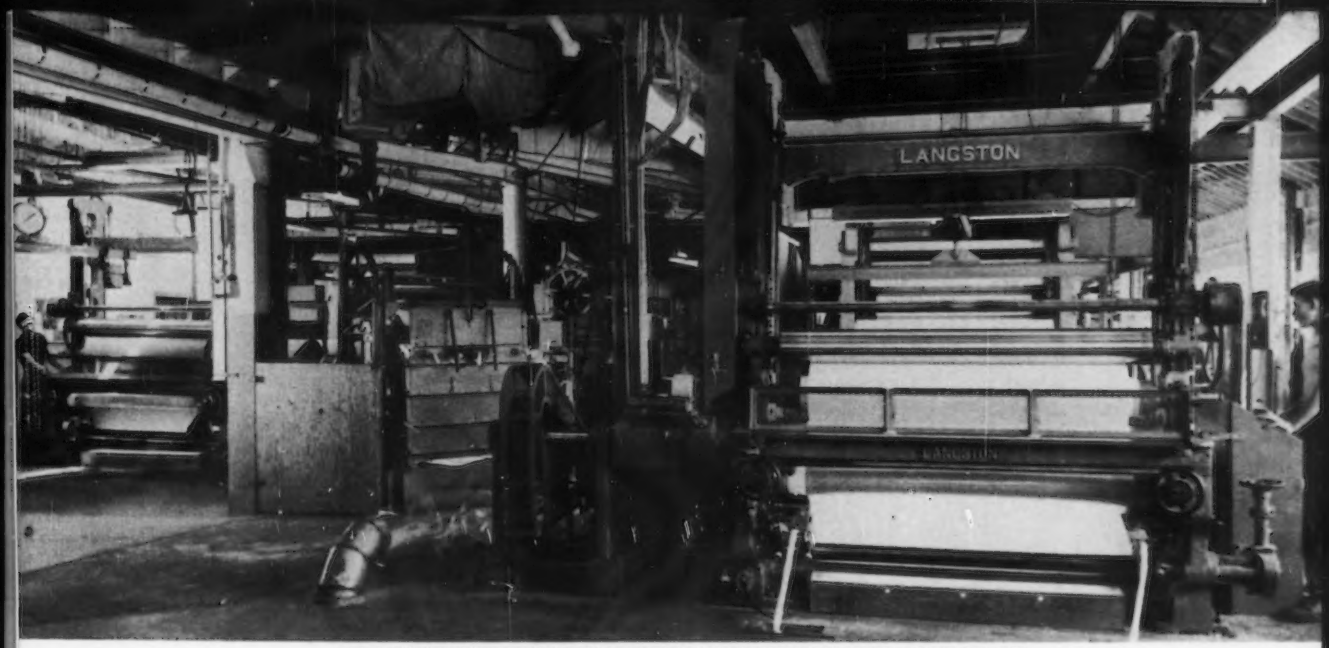
*Garlock Trade Mark
†DuPont Trade Mark

Packings, Gaskets, Oil Seals, Mechanical Seals, Molded and Extruded Rubber, Plastic Products



TWO LANGSTON WINDERS AT WATERFORD, N.Y. REWIND FELT-MARKED, CONSTRUCTION AND SPECIALTY PAPERS RANGING FROM 30-LB. TO 150-LB. BASIS WEIGHT

THE **Langston Leader** PAPER MILL EDITION

Leadership...by design

SAMUEL M. LANGSTON CO. • CAMDEN 4, N. J.

AUGUST, 1959 | *Published for the information of paper and board mills* | VOL. 1, NO. 4

At Mohawk Paper Mills, Inc.

THREE NEW LANGSTON WINDERS WIN PRAISE

Specialty Paper Producer Expands, Modernizes Plant, Lauds Langston Equipment

Up the Hudson River, in the industrial complex which is Albany-Schenectady-Troy and a galaxy of satellite communities, Mohawk Paper Mills, Inc., is one of the stars that brightens the region's fame far beyond its borders.

Wherever business demands fine text and cover papers for advertising, direct mail, annual reports or commercial announcements, Mohawk papers may be found represented. So, too, where school children work out imaginations on poster and construction paper, a line Mohawk makes in 30 different colors—more colors, the company says, than made by any other mill of comparable size.

Examine a finely embossed or fluted box for jewelry and the chance is a good one the flock or lining is on Mohawk base stock.

This Issue Is Printed on Mohawk Navajo Text

This issue of the Langston Leader is printed on Mohawk's 80-pound Navajo text. It is described by the manufacturer as "an unusually attractive text paper for prestige appearance and brilliant performance in fine printing. A bright natural white background for deep blacks and true colors ... a smooth, receptive surface for letterpress, offset and gravure."

Three Fourdriniers

Mohawk Paper Mills produces on three Fourdriniers, one at Cohoes about 10 miles north of Albany and two at Waterford several miles further north. A non-integrated operation, the Mohawk mills annually produce about 24,000 tons of various texts, covers, vellums and specialty papers.

Expansion and modernization is very much in evidence at the company's plants. A new warehouse at the Cohoes Division provides 48,000 square feet of storage space for finished paper. A new warehouse at the Waterford Division is of equal size, and at Waterford a new 14,000 square-foot building has just been completed where two cutters will soon be installed.

At Cohoes, the 110-inch Sandy Hill paper machine has been fitted with a new Rolla-Reel, and plans have been made to install a new drive, according to T. Charles Nixon, Cohoes mill manager.

At Waterford, the two 72-inch Sandy Hill Fourdriniers have been improved recently with Pope-type reels.

Langston Winders Outstanding

But, outstanding at both mills, according to company officials, has been

Three Langston Winders

(*Continued from preceding page*)

the installation of three new paper machine slitter and winders built by Samuel M. Langston Company.

The Langston winder at Cohoes is a 112-inch machine. According to production manager Myron Flotow, "It is doing an excellent job of rewinding tight, compact, evenly wound rolls."

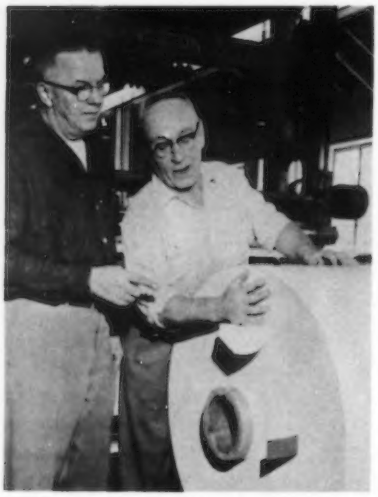
Says Flotow: "Our Cohoes production ranges from 13-pound (17 by 22) basis to 175-pound (25 by 38) basis. We're rewinding into rolls that vary from 9 inches wide by 40 inches in diameter to two 50-inch wide rolls by 35 inches in diameter.

Happy With Performance

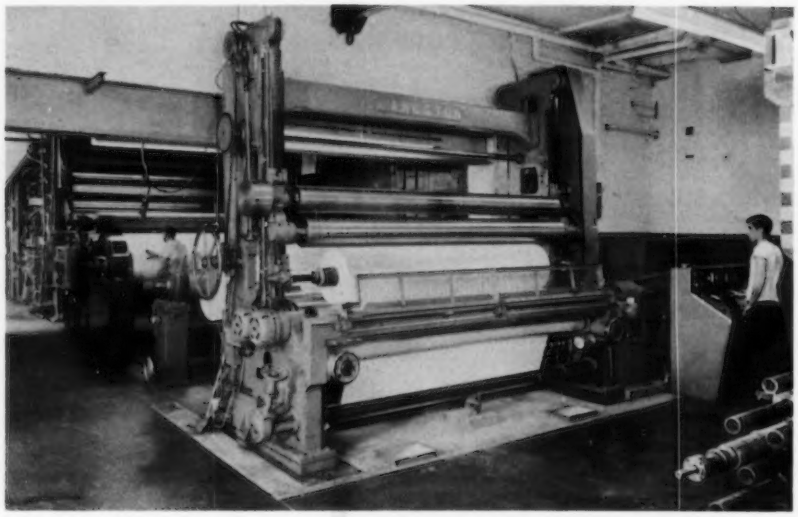
"The Langston winder keeps up with production, makes nice clean cuts, is easy for the men to learn to run and operate and easy to thread through. The slitters are handy to get at for setup. We're happy about the way this new winder is performing."

The production at Cohoes includes the finer grades of texts, covers, vellums and ledgers, mostly white. After they are slit and rewound, the rolls are taken to either of two, 110-inch wide rotary duplex cutters where they are sheeted to specifications.

The two paper machines at Waterford,



CLEAN-CUT, square-ended roll passes examination by assistant Waterford manager Otto Zieball, left, and superintendent William J. Roberts, Sr.



AT COHOES. Langston winder on 110-inch paper machine slits and rewinds fine grades of text, vellum, cover and ledger, ranging from 13-lb. (17 by 22) basis to 175-lb. (25 by 38) basis.

in addition to poster and construction papers, produce specialty papers for box facings, linings and covers, such as Mohawk's Navajo cover which comes in 12 colors. Here also are made felt-marked papers such as Artemis, Cortlea and Diana.

Big Improvement Cited

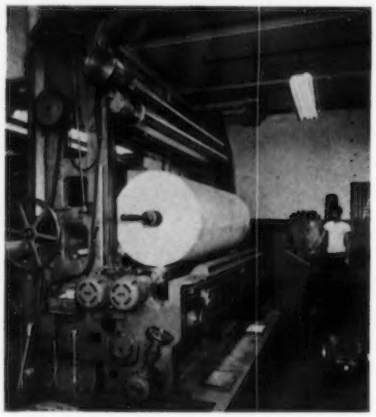
Both machines are running a 66-inch-wide sheet ranging from 30-pound to 150-pound (24 by 38) basis weight. Langston 72-inch wide slitter and winders slit and rewind the sheet to specifications.

"The Langston winders have made a big improvement in our rolls," says Waterford plant superintendent William J. Roberts, Sr. "The rolls are harder and they are wound off evener than we have ever been able to accomplish before," he adds.

Otto Zieball, assistant manager, says: "The slitters are very good. Their action is sharp and clean. They are trouble free. We really approve of the fixed shear angle feature of the slitters. There's practically no chance of improper setup or of their getting out of line. And the Mt. Hope rolls are important. They give good separation."

Winder Features

Each Langston winder utilizes a General Electric variable speed drive. Each is a precision built machine, engi-



OPERATOR hydraulically ejects roll by push-button.

neered to produce the finest quality slitting and winding.

All rotating rolls are dynamically balanced for 500 fpm in excess of contract speeds—a Langston standard feature. Each machine is equipped with Langston's time-proven clean cut, shear cut slitters. Other Langston standards on the equipment include console-mounted and operator controlled rider roll torque drive and rider roll hold-down to tightly secure the sheet to the core and achieve a good hard roll center.

The winder at Cohoes in addition is equipped with roll ejector and Langston patented rider roll density controller. Controls for these features are console-mounted for operator control.

As it has from its inception, the Huber, Ga., laboratory maintains a close relationship with customers through our Technical Service department. As our Georgia operations—and service to our customers—have grown, our laboratory has been enlarged to provide ever better service.

The largest of the Huber Paper Laboratory expansions was recently completed. The laboratory is equipped and manned to conduct the same kind of work that our customers perform in their own laboratories. We duplicate all of the essential stages of paper making from sheet to finished filled or coated paper.

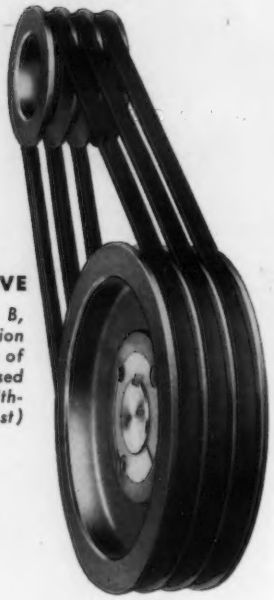
If you would like to learn how the Huber Paper Laboratories can improve *your* product, we will be glad to sit down and discuss it with you.

J. M. HUBER CORPORATION
630 THIRD AVENUE • NEW YORK 17, N. Y.
Mines and Plants: Huber, Ga.; Graniteville & Langley, S. C.

Announcing

an entirely new line of V-Belt Drives . . . . .

DODGE Dyna V



CONVENTIONAL TAPER-LOCK DRIVE

(— using standard A, B, C, D and E cross section belts, the hp ratings of which have been increased an average of 40% without any increase in cost)

DYNA-V TAPER-LOCK DRIVE

NEW *HIGH CAPACITY*

NEW *COMPACTNESS*

NEW *SAVINGS IN COST*

COMPARISON, ILLUSTRATED ABOVE — 3 HP, 1750 RPM, 2.41 TO 1 RATIO

	BELTS		SHEAVES			CENTER DISTANCE	HP	WEIGHT (LBS.)	COST	
	Number	Size	O.D. Driver	O.D. Driven	Width				Per hp	Per Drive
CONVENTIONAL TAPER-LOCK DRIVE	3	A42	4.15″	8.95″	2½″	12.3″	4.62	24.7	$5.62	$25.98
DYNA-V TAPER-LOCK DRIVE	2	3V400	3.35″	8.00″	1³⁄₃₂″	10.8″	5.0	18.0	$4.50	$22.50
% SAVING *Savings vary with different sized drives*			**19%**	**10%**	**56%**	**12%**	+	**27%**	**19.9%**	**13.4%**

Dyna-V Drives are sensationally compact. They are capable of handling up to three times as much horsepower in a given space. Dyna-V opens vast new possibilities for better, more economical machine design. And, in most instances, *Dyna-V costs less!*

Narrower grooves, to match stronger, narrower Dyna-V Belts, greatly reduce the face width and the weight of Dyna-V Sheaves. Cost is lowered. Smaller diameter sheaves and shorter center distances multiply savings.

Dyna-V Sheaves decrease shaft overhang—increase bearing life. The new dimensional stability of Dyna-V Belts solves the problem of belt matching. Every belt carries its full share of the load.

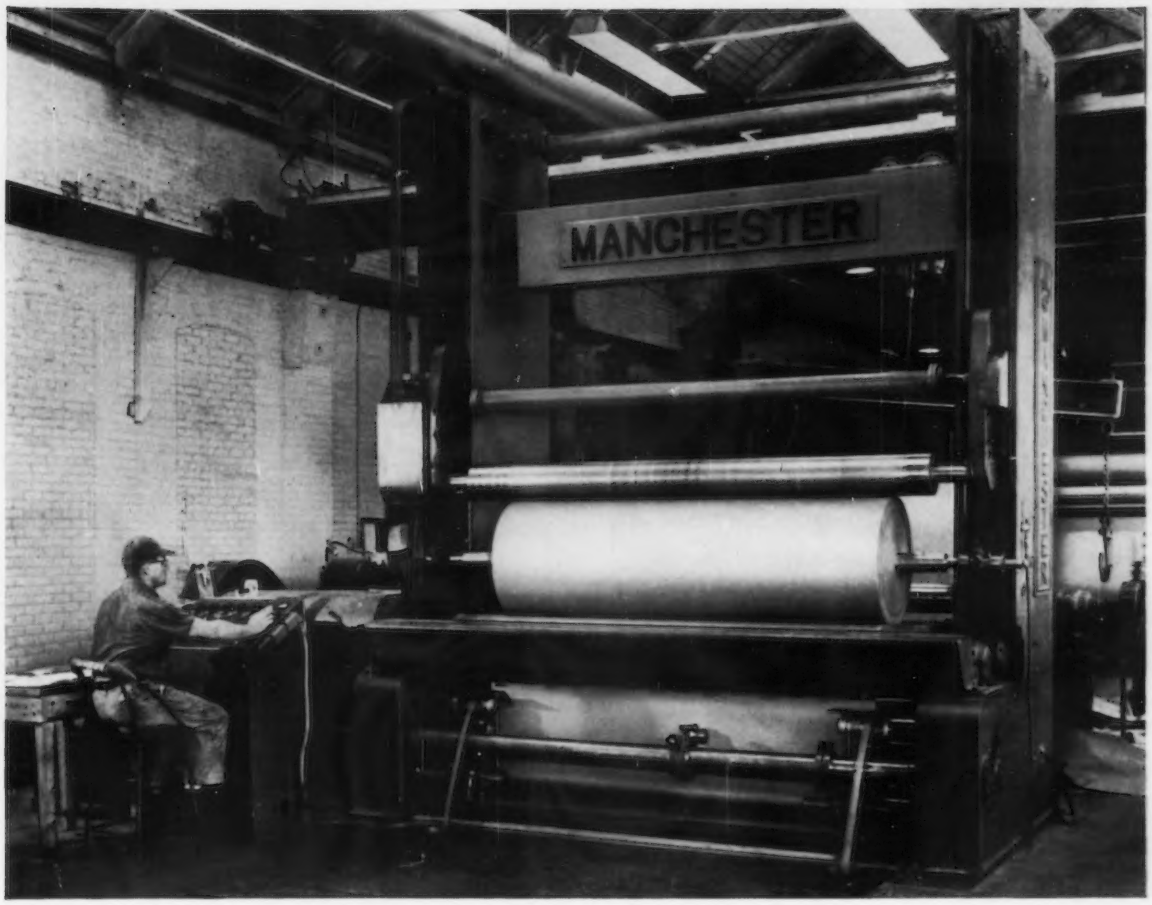
Dyna-V Drives are available for capacities from 1 to 1500 hp. Ask your Dodge Distributor. Or write us for new Dyna-V Bulletin.

DODGE MANUFACTURING CORPORATION, 2900 Union St., Mishawaka, Indiana

DODGE

of Mishawaka, Ind.

CALL THE TRANSMISSIONEER—your local Dodge Distributor. Factory trained by Dodge, he can give you valuable help on new, cost-saving methods. Look in the *white* pages of your telephone directory for "Dodge Transmissioneer."



Here's another profit-making installation

by MANCHESTER MACHINE COMPANY

Smooth, tight rolls every time—low maintenance—trouble-free operation—these are the things that add to paper mill profits. Pictured above is a Manchester winder in operation at a well-known Michigan mill. This was a *repeat order* placed less than six months after installation of their first Manchester winder.

Designed to accommodate 84-inch diameter rolls, this rugged all-steel machine room winder is turning in profit-making performance day after day.

See what Manchester can do for you before you order another winder. THE MANCHESTER MACHINE COMPANY, MIDDLETOWN, OHIO.

MMC

Manchester Builds Profits for Papermakers

IN A JAM FOR STAINLESS STEEL? CALL YOUR ARMCO DISTRIBUTOR

When you're in a jam for stainless steel, it pays to know your nearby Armco Distributor. His Steel Service Center is as close as your telephone . . . ready to serve you in an emergency or in normal maintenance of equipment.

Besides getting the steel you need in a hurry, distributors of Armco Stainless Steels can assist in selecting the grade for the job and provide helpful fabricating tips. Many are prepared to cut your stainless steel to the exact size to meet your requirements.

VARIETY OF GRADES

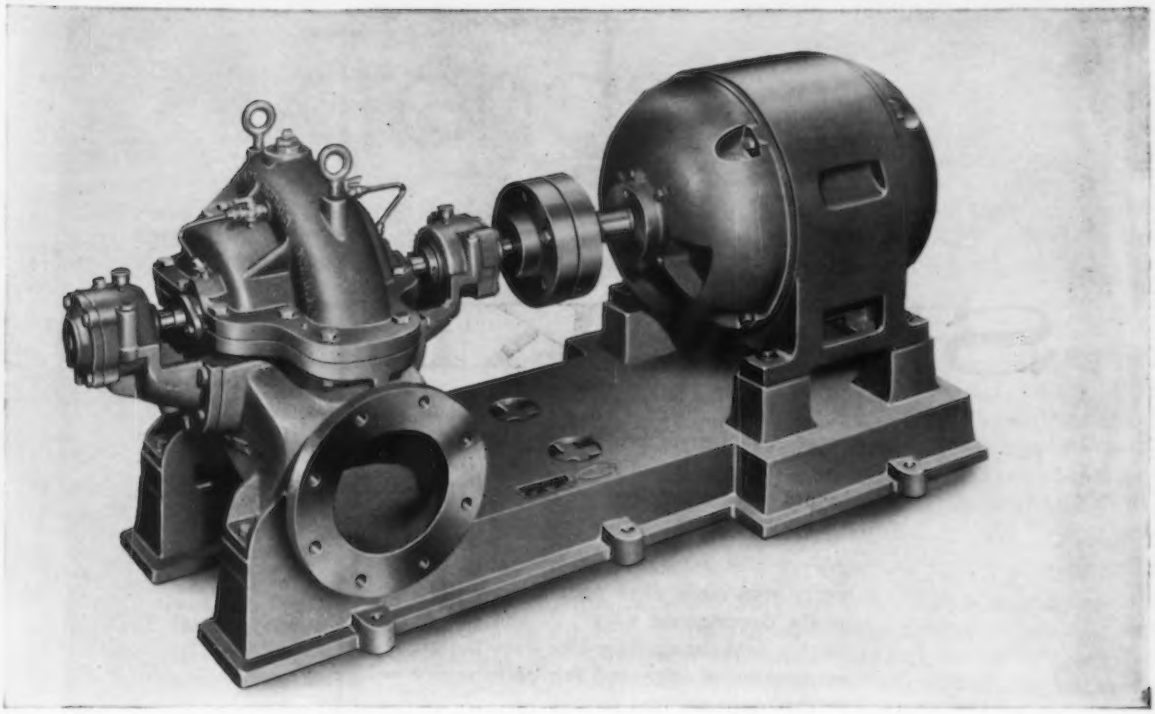
Standard stainless steels and many special grades produced exclusively by Armco are available through your Armco Distributor. He stocks standard grades in a wide range of sizes and shapes for immediate delivery. And he can obtain special grades from the mill without delay.

If you don't know the name of the Armco Distributor nearest you, just write Armco Steel Corporation, 3109 Curtis Street, Middletown, Ohio. We'll be glad to put you in touch with him.

ARMCO STEEL

ARMCO®

Armco Division • Sheffield Division • The National Supply Company • Armco Drainage & Metal Products, Inc. • The Armco International Corporation • Union Wire Rope Corporation



"Buffalo" Double Suction Pump

SPECIAL "BUFFALO" FEATURES IMPROVE WHITE WATER PUMPING EFFICIENCY, DEPENDABILITY

"Buffalo" manufactures a complete line of centrifugal pumps, time-proven throughout the paper industry for their ability to perform with the utmost efficiency, economy and reliability.

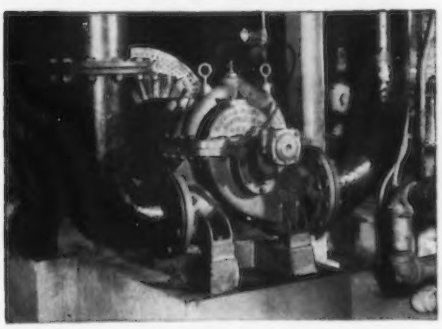
For instance, "Buffalo" Class "SL" Double Suction, Single Stage Pumps for white water service feature enclosed impellers and lateral type casing wearing rings to insure peak performance and long, trouble-free life.

It is impossible for particles to become lodged in these lateral type rings. This prevents costly mechanical complications resulting from an overloaded motor caused by an abnormal brake load on the shaft.

Suction and discharge openings are located in the lower (fixed) half of the casing. This permits removal of the upper section of the casing for quick, easy, inexpensive inspection and servicing. Entire shaft and rotor can be replaced as a unit.

Ask your nearby "Buffalo" Engineering Representative about the many other advantages of "SL" Pumps for white water service, or write for Bulletin 955-S.

The "Buffalo" Class "SL" Double Suction Pump is only one of a complete line of pumps designed for the wide range of liquid-moving jobs in paper mills. For full information, write for the Bulletin covering *all* "Buffalo" Pumps for the Paper Industry—No. 953-K.



"Buffalo" No. 8 "SL" Pump for White Water Service. Shows quickly removable upper section of casing to facilitate inspection. Also note clean lines of suction piping.

SPECIAL CONSTRUCTION for Special Paper Mill Conditions. Example: For Bull Screen or grinder service in ground wood mills, "Buffalo" provides a special sealing ring construction for white water pumps. This clear water sealed type ring will force out any material, including resins, that may accumulate.

"Buffalo" Pumps give you the famous "Q" Factor — the built-in QUALITY that provides trouble-free satisfaction and long life.

BUFFALO PUMPS

"Buffalo" PUMPS

Division of Buffalo Forge Co.

159 Mortimer Street • Buffalo, N. Y.

Canada Pumps, Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

A BETTER CENTRIFUGAL PUMP FOR EVERY LIQUID

SIBAKIS

is the abbreviation for the American Management Association's bright, new slogan *See It Big and Keep It Simple.* It is also the most appropriate word for describing Huyck's viewpoint toward synthetic-content felts.

Huyck sees it big by (1) laboratory testing every man-made fiber presently available or in the development stage . . . and (2) thoroughly field testing those that show the greatest promise of improved felt performance — so that only the best remain.

Huyck keeps it simple by using *only* those fibers that give our felts superior operating properties.

Your Huyck Field Service Engineer wants to work with you in analyzing your specific machine requirements. Let him help determine the advantages you can gain by employing synthetic-content felts.

HUYCK FELTS

Huyck Felt Co.,
Rensselaer, N. Y.;
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In Canada: Kenwood Mills Ltd.,
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NEW HUYCK FELTS

★ INDUSTRIAL FABRICS

FIRST IN QUALITY • FIRST IN SERVICE SINCE 1870

Trends

Paper and Board Mill Rate Holds High

Both paper and board mills ran between 95% and 96% of capacity during August according to our preliminary estimate. This is the highest operating rate in many years for the mills in the traditionally "slack" month of August.

Market Pulp Capacity Possible Trend

Solution to the problem of excess market pulp capacity in this country may mean a trend to integration of the market pulp mills with new paper or board facilities. At least one new southern market pulp mill is already taking steps in this direction. Demand for market pulp has not kept pace with growth in paper and board production because most of the new capacity has been at existing or new mills with integrated pulp producing facilities.

Canadian Pulp and Board Steady

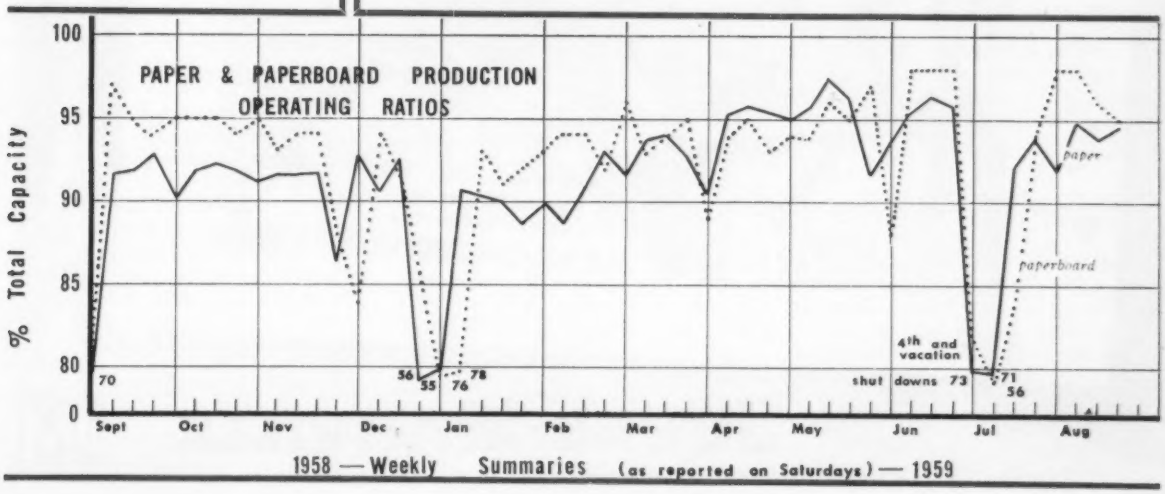
Canadian pulp production in July was 8% above a year ago, while exports were up 10%. Pulp output for the first seven months was 5% ahead and exports for the period were ahead 15%. Canadian paperboard production was 7% ahead for July and 6% for the seven months' period.

Waste Papers Edging Upwards

Higher waste paper prices previously predicted here are beginning to show up. Early in September increases were posted for a number of grades in the Los Angeles area, and folded news was up in New York. If the August high level of mill activity is maintained this fall, many grades of waste paper will surely move upward in price.

Sulphite May Compete with Kraft

Description of a new and different sulphite pulping process is the leading feature article of this issue. This Swedish process has been in full scale commercial development for five years but reached its final form a year ago. The editor was very impressed with this operation which he inspected this spring. Its potentials in competing with recently more popular kraft are twofold, first it is applicable to pine and Douglas-fir and secondly in pulp quality.



NEW DEVELOPMENT IN PAPER MAKING

MICRO-CEL® T-37

A NEW JOHNS-MANVILLE SYNTHETIC SILICATE

Now from one paper filler: *Greater opacity* and high brightness—at lower cost

Micro-Cel T-37, Johns-Manville's new paper filler, opens up new opportunities for greater opacity in high-brightness products including coatings, fine papers and boxboards. Its unique particle structure ideally suits it to any furnishes where high opacity is needed.

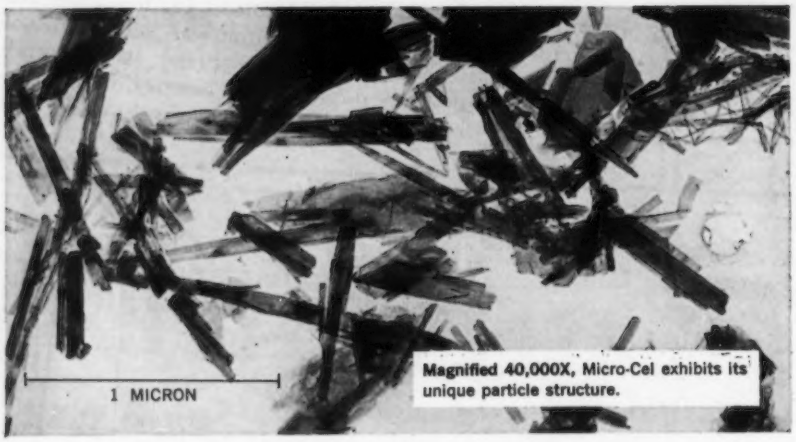
Micro-Cel lowers costs, too, because it can be used as a partial replacement for TiO_2 on a pound-for-pound basis.

What *is* Micro-Cel T-37? It is a new type of synthetic silicate never before supplied to the paper industry. Produced under carefully controlled conditions at the Johns-Manville Celite plant in Lompoc, Calif., it provides unusually fine particle size in the 1-2 micron range.

For further information, samples and technical assistance, write to Johns-Manville, Box 14, New York 16, N.Y. In Canada, Port Credit, Ont.

AVERAGE PHYSICAL PROPERTIES
Micro-Cel T-37

Loose Weight, lbs. per cu. ft.	4.7
Water Absorption, lbs. per 100 lbs.	450
Specific Gravity	2.53
pH	8.8
Free Moisture, % by weight	2.5
Brightness, TAPPI Method	93
Abrasion Index, Valley-Iron	16
Refractive Index	1.57



Magnified 40,000X, Micro-Cel exhibits its unique particle structure.

JOHNS-MANVILLE

JOHNS MANVILLE JM PRODUCTS

PAPER TRADE JOURNAL

WEEK OF SEPTEMBER 7, 1959

STANDING: (l-r) Ernest Vaissiere, R. March, E. L. Lamb, H. W. Fales, C. G. R. Johnson, R. P. Price and G. Sheets. Seated: J. H. Heuer with the editor. K. R. Bendetsen was already in Europe.

Top Company Executives to Inspect Finnish Pulp and Paper Industry

Leading executives from eight major U. S. pulp and paper companies left last week for a two-week tour of Finnish pulp and paper mills as guests of the Finnish Paper Mills Ass'n. The tour which will occupy the first two weeks of September has been organized by the Madden Corp. and its affiliates who are the American representatives of the Finnish Paper Mills Ass'n.

Members of the group were: C. G. R. Johnson, vice president, Kimberly-Clark Corp.; George Sheets, division manager, Mead Corp.; Richard P. Price, vice president, Hammermill Paper Co.; John H. Heuer, vice president, manufacturing, Great Northern Paper Co.; E. L. Lamb, vice president, Minnesota & Ontario Paper Co.; Karl R. Bendetsen, vice president, Champion Paper & Fibre Co.; H. W. Fales, vice president, St. Croix Paper Co.; Robert March, vice president, Scott Paper Co. They were accompanied to Finland by Ernest H. Vaissiere of the Madden Corp. and Kari Hornamo of the Finnish Paper Mills Ass'n. who was visiting here.

The group will meet with Finnish pulp and paper industry leaders for technical discussions and a tour of inspection of leading Finnish mills. The tour will include visits to mills of: Enso-Gutzeit, United Paper Mills, Ltd., Kymmene, Rauma Repola, Tampella, Myllykoski, W. Rosenlew and G. A. Serlachius. Also, a tour will be made of the Finnish Pulp & Paper Research Institute.

This is the first group visit of American industry officials of any kind to Finland. The tour was organized by Madden Corp. in response to an invitation extended by The Finnish Paper Mills' Ass'n. on behalf of the paper industry of Finland and as a token of appreciation for the hospitality and cooperation that has been extended, in past years, to the many Finnish mill executives and technical people that have visited and worked in American pulp and paper mills. A similar invitation will shortly be extended to leaders of the Canadian pulp and paper industry.

While in Finland the visitors will meet with directors of the Finnish Paper Mills Ass'n., officials of the Finnish Wood-using Industry Ass'n. and technical and management personnel at the various mills that will be visited.

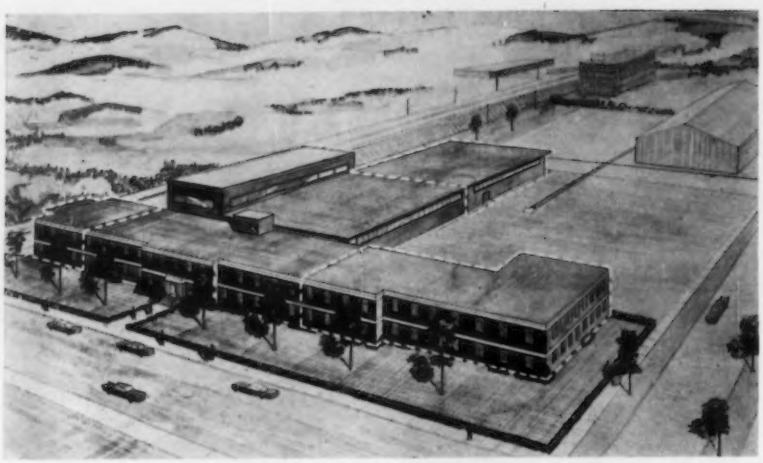
Alaska Pine Changes Name to Rayonier

Rayoniers Canadian subsidiary, Alaska Pine & Cellulose Ltd., has changed its name to Rayonier Canada Ltd. W. E. Breitenbach, subsidiary president, reported the change became urgent when it was learned that "the name of our latest competitor was the same as ours when translated into the language of a customer country—Japan." He referred to Alaska Lumber & Pulp Co., Japanese owned company, which will begin operation of a magnesium base sulphite dissolving pulp mill in Sitka, Alaska, this fall.

U. S. Loan to Finance 2nd Philippine Mill

The United States Development Loan Fund has announced commitment of funds for a $5,300,000 loan to the Bago Pulp & Paper Co. Location of the proposed mill is on the Bago River in Negros Occidental Island, Philippines. The mill is to produce paper products including bleached writing, printing and fine paper and unbleached bag, sack, wrapping paper and lining board. Average annual output is expected to be 22,500 metric tons.

This is the second Development Loan Fund to the Philippines for establishment of a pulp and paper mill. On July 10, a loan was granted to the Bataan Pulp & Paper Co. for a similar amount to finance a mill to produce paper from bamboo.



Mead Expands Research Facilities

The Mead Corp. has approved plans which will double the size of its Research Center in Chillicothe, Ohio, at a cost of $1.4 million. The Research Center, built originally in 1953, will be enlarged by two extensions to the main building to provide 39 additional offices and 20 new laboratories and by extending the adjoining pilot plant. This expansion will increase the size of the Research Center by 46,900 square feet.

Increased demands made upon research facilities by the corporation's accelerated growth, its emphasis on basic and process research together with the broadening horizons in new product development have made this expansion necessary.

In addition to the extensions, the main building will be remodeled to provide relocation and enlargement of most of the Mead research groups. The library, photography laboratory and constant humidity room will undergo the greatest changes. The extension of the pilot plant will provide the much needed space for installation of additional equipment and machinery. One-half of the pilot plant extension will have a mezzanine floor.

This is the second expansion of the Research Center's pilot plant since it was originally completed. A building was added in 1958 to house the wet end of an experimental paper machine and its auxiliary equipment to make fundamental studies in the papermaking process.

Five offices and seven laboratories in the Research Center extension will be reserved for research activities of Hurlbut Paper Co., a wholly owned subsidiary, South Lee, Mass.

The work at the Mead Research Center is under the direction of R. H. Savage, vice president, research, R. N. Griesheimer, director, and J. C. Redd, director, new products.

First Patent Application From State of Hawaii Filed

The first patent application from the new State of Hawaii, covering a new method of utilizing bagasse in the manufacture of insulation board, was filed on August 21 at the U. S. Patent Office in Washington, D. C., within minutes after the Territory was proclaimed as the 50th state.

Developed by a 55-year-old native of Korea, Sung H. Cha, the new method is designed to reduce production costs and result in better insulation board.

Mr. Cha is research and quality control director at the Hilo plant of The Flintkote Co., the third largest industrial manufacturer in the Hawaiian Islands. He has been identified with the insulation board business in Hawaii since its inception there in 1932.

Anjopa Sale Completed

Sale of properties formerly owned by Anjopa Paper Mfg. Co. in Napanoch, N. Y., to American Paper & Board Mfg. Co. is completed. Joseph Lazar and Sidney Grusey are the principals. They plan to use the property for the manufacture of paperboard and boxes.

Paper and Board Production

According to the American Paper and Pulp Ass'n. the ratio of the United States production to mill capacity for the week ending August 22, 1959, was 94.5 per cent compared with 96.3 per cent revised for the preceding week. The ratio was 90.0 per cent for the corresponding week a year ago.

The paperboard production ratio for the week ending August 22, 1959, was 95 per cent compared with 96 per cent for the preceding week and 92 per cent for the corresponding week a year ago.

(Detailed statistics on page 64)

NEKOOSA PAPERS salesmen and home office executives of Nekoosa-Edwards Paper Co. lined up for a group photo during the firm's 27th annual sales conference August 24-27 in Port Edwards, Wis.

PAPER PEOPLE

New Top Executives for Kimberly-Clark

Election of William R. Kellett as president and G. Kenneth Crowell as executive vice president of Kimberly-Clark Corp. was announced at a meeting of the board of directors at which John R. Kimberly was re-elected chairman of the board and chief executive officer.

Mr. Kellett succeeds Mr. Kimberly as president of the firm, Mr. Kimberly has served as president and Mr. Kellett as executive vice president of Kimberly-Clark since 1953. Mr. Crowell has been vice president and secretary.

The board also advanced two vice presidents and elected two new officers. Lewis E. Phenner and Andrew G. Sharp were elected senior vice presidents. New officers are William J. French, vice president of sales for consumer products, and William W. Cross, vice president of sales for industrial products.

Roger A. Baird, assistant secretary, was elected secretary.

Brown Co. Advances Montelin and Lynsky

Promotions of Theodore I. Montelin to the position of steam engineer and of Edward L. Lynsky to the position of power engineer have been announced by George Craig, chief engineer of Brown Co.

Mr. Montelin, who has been maintenance engineer in Brown's power and steam department since 1953, will assume responsibility for all steam generation and departmental mechanical maintenance, reporting directly to Henry Stafford, chief power engineer.

Mr. Lynsky, formerly assistant to Mr. Stafford, will supervise all electrical generation and power maintenance functions. He has been a member of the Brown engineering department since 1951, and is a graduate of Northeastern University.

Guest Joins Brown At Berlin Mill

Appointment of Karl M. Guest as assistant manager of pulp manufacturing at Brown Co. has been announced. Mr. Guests' responsibilities will cover both kraft and sulphite mill operations at the company's mills at Berlin.

Mr. Guest, who has been associated with pulp and paper manufacturing since he graduated from Clemson University in 1936, has occupied various technical and supervisory manufacturing positions with Union Bag, National Container Corp., and latterly with Gulf States Paper Corp. at its new mill in Demopolis, Ala.

Race Gives Up Post At Sutherland Paper

William Race has resigned as chairman of the board and as a director of the Sutherland Paper Co., effective September 1, 1959. His future plans are uncertain at this time.

Nicolet Paper Elects Four New Board Members

Four new directors have been elected to the board of Nicolet Paper Corp.

The new board members are Shy Rosen, senior vice president of Milprint, Inc., of Milwaukee; Herbert B. Wenberg, assistant manager of Nicolet Paper Corp.; Hugh Cullman, assistant treasurer of Philip Morris, Inc.; and Clifford H. Goldsmith, assistant to the vice president in charge of operations and subsidiaries of Philip Morris, Inc.

Mr. Rosen has been associated for 29 years with Milprint, the parent company of Nicolet Paper Corp. A director of Milprint, Mr. Rosen for many years was vice-president in charge of the company's eastern operations based in New York City.

Mr. Wenberg joined Nicolet Paper Corp. in 1936. A graduate chemist (Lawrence College, Appleton, Wis.), he has worked in Nicolet's finishing department, as a chemist, and from 1947 to 1954 was technical superintendent of the Nicolet plant. He became assistant manager in 1954.

Mr. Cullman joined Philip Morris, Inc., as assistant director of market research in 1954, when Philip Morris acquired Benson & Hedges, where he had been director of research. He was named Parliament brand manager in June 1955, and assistant treasurer in 1958.

Mr. Goldsmith also came to Philip Morris from Benson & Hedges in 1954. Since then he has been special assistant to the president, and director and coordinator of packaging development. He was appointed to his present post early this year.

H. P. Quirk

4th Generation of Quirk Family Joins Peninsular

H. P. Quirk has just joined the Peninsular Paper Co. as plant engineer, following graduation from the College of Engineering of The University of Michigan. Ever since the Peninsular Paper Co. was organized in 1867 by Daniel L. Quirk, the Ypsilanti, Mich., mill has been managed and guided in its growth by direct descendents of the founder. Continuation of the family tradition is more assured than ever, with the addition this month of the second member of the fourth Quirk generation to the Peninsular staff.

The first member of the fourth generation of the Quirk family to join the mill staff was his brother, D. G. Quirk, now vice president in charge of sales. Daniel T. Quirk, grandson of the founder, is president of Peninsular, and the third member of the family to lead the mill during its 92-year history.

Riegel Promotes Two

Riegel Paper Corp. has appointed Jacob I. Fisher to the newly created position of divisional purchasing agent for the Specialty Products division. He was formerly production control manager.

Harry Singley, Jr., formerly acting purchasing agent, has been named purchasing agent for the paper mills in New Jersey. Both men will continue to make their offices in the Milford (N. J.) mill.

W. L. Meyer

G. O. Baker

Crown Zellerbach Elects Controller

William L. Meyer has been elected controller of Crown Zellerbach Corp. in San Francisco. Mr. Meyer, assistant controller for the past two years, succeeds L. F. Beckers who recently resigned. Gilbert O. Baker, Jr., director of timber accounting policy, is assistant controller.

A graduate of St. Louis University in 1926 with a B.S. in commerce, Mr. Meyer worked for the public accounting firm of Ernst & Ernst in St. Louis for 13 years before joining Gaylord Container Corp. as controller in 1939. He later served Gaylord as assistant secretary and assistant treasurer, then as secretary and treasurer, and later as vice president and treasurer. When Gaylord was merged with Crown Zellerbach in 1955, he was named assistant treasurer and, in 1957, he moved to San Francisco as assistant controller.

Mr. Baker graduated from the University of Washington in 1938 with a B.A. in economics and business. He served as staff auditor for Price Waterhouse & Co. in Seattle, and as vice president and treasurer of Harbor Plywood in Aberdeen, Wash., before joining Crown Zellerbach as director of timber accounting policy in 1956.

Hanna Joins Cel-Fibe At Milltown Mill

Edwin A. Hanna has been named mill superintendent at the headquarters plant of the Cel-Fibe Division of Personal Products Corp. in Milltown, N. J.

Mr. Hanna is working under the supervision of N. G. McLean, production manager in charge of three mills producing cellulose wadding used as padding and cushioning in protective packaging for civilian and military uses; as a product component in the automotive, furniture, bedding, and other industries; and for filtering, quilting, and converting applications.

The new mill superintendent came to the Cel-Fibe division after many years with Scott Paper Co. He worked in process control, became superintendent of pulp preparation at Chester, Pa., and later Fort Edward, N. Y., and subsequently became a Scott division manager.

Mr. McLean pointed out that Mr. Hanna's broad experience in high-speed production will be of value in the continuing Cel-Fibe program of improvement of facilities for greater output of the division's quality-controlled line.

French Paper Names Sales Promotion Mgr.

Bruce Bigford has been appointed sales promotion manager of the French Paper Co. of Niles, Mich. Mr. Bigford is a graduate of Lawrence College, of Appleton, Wis. Upon graduation in 1953, he was employed by the Neenah Paper Co. as sales representative. Neenah was acquired by Kimberly-Clark, and Mr. Bigford then sold their entire line of printing and writing papers.

In his new capacity, he will be responsible for the development of a broader market coverage for the French line of high quality printing papers.

Downingtown Paper Selects Mfg. Mgr. for Board Mills

The Downingtown Paper Co. announces that George B. Nicholson, Jr., has been appointed manufacturing manager for the board mills in Downingtown, Pa. Mr. Nicholson will replace John W. Gray, Jr., who will retire soon. Mr. Gray participated in the selection of Mr. Nicholson and will continue to serve the company as staff assistant to Mr. Nicholson.

Mr. Nicholson is a graduate of Syracuse University where he majored in pulp and paper technology. He has been associated with the Federal Paper Board Corp. as plant manager at its New Haven, Conn., plant. Prior to this he was with the Black-Clawson Paper Machine Manufacturing Co. for a good number of years.

Pepperell Co-Workers Fete Retiring Assistant Supt.

A farewell party was given for Calvin R. Hills at the Groton Inn, Pepperell, Mass., by 24 members of the office and advisory personnel of the St. Regis Paper Co. Mr. Hills is retiring from St. Regis after 36½ years of service with the East Pepperell division. He started as a millhand in 1923 and attained the position of assistant paper mill superintendent. Appropriate after dinner remarks were made by members present and Mr. Hills was presented a gift of luggage.

A. M. Stern

Westvaco Research Head Opens D. C. Office

Arthur M. Stern is being transferred from the West Virginia Pulp & Paper Co. Covington research laboratory to Washington, D. C., where he will open an office. His move is in connection with responsibilities recently added to his position as head of microbiological research for West Virginia Pulp and Paper Co.

Dr. Stern in the past two years has set up broad research programs covering slime control, river pollution abatement and other biological problems for West Virginia. In addition to this, he has now taken on duties as coordinator for the company's research efforts in the "food additive field."

Dr. Stern has set up an office in Washington so that he can readily be in touch with the Federal Food and

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Drug Administration. By being in touch with FDA officials, Dr. Stern will be able to keep the operating divisions informed promptly of new developments.

He will continue to consult with various Westvaco divisions on slime control and pollution abatement. Dr. Stern's laboratory research work will continue under his direction at the Covington research center.

Dr. Stern joined West Virginia Pulp and Paper Co. in July, 1957. He received his bachelor's degree in biology and his M.S. and Ph.D. in bacteriology at the University of illinois. Upon completion of his studies, he became a professor at Rutgers University where he taught bacteriology for six years. Later he joined West Virginia Pulp and Paper Co. at the Covington research laboratory.

Promotions Announced by Champion Paper & Fibre

Promotions and position changes of managerial personnel at The Champion Paper and Fibre Co.'s Canton plant have been announced.

Named to new top division management positions are Carl T. Welte and Willis Kirkpatrick, both of whom become assistant Carolina Division managers. Mr. Welte moves up from his present position of production manager and Mr. Kirkpatrick has been serving as an assistant to the division manager.

Mr. Welte joined Champion in 1933 and has extensive experience in pulp, paper and paperboard production.

Mr. Kirkpatrick has been associated with Champion for 35 years and has been division controller and supervisor of management planning.

Replacing Mr. Welte as production manager will be James E. Wilkinson, who is promoted from manager of the process controls department. He has served 24 years at Champion's Carolina Division and prior to becoming manager of process controls was general superintendent of plant engineering department.

Named manager of the process controls department is W. J. Bull, who is promoted from his present position as assistant production manager.

Mr. Bull has extensive training and experience in many phases of pulp and paper manufacturing. He joined Champion in 1937 as a laboratory chemist and has served as a technician, technical advisor, assistant general superintendent of

paper and board manufacturing and assistant production manager.

Harold Morris, who has been assistant production manager at Champion's Texas Division, becomes assistant production manager replacing Mr. Bull. Mr. Morris is one of the pulp and paper industry's outstanding experts in paperboard manufacturing.

Cedric A. Stone, plant engineer at the Carolina Division and a veteran of 30 year's service, retired September 1.

Joshua J. Ward, Jr., will become division engineer at the Canton plant, replacing Mr. Stone. Mr. Ward is currently Champion's director of general plant engineering, from which position he will be on leave while at the Carolina Division.

OBITUARIES

William Kirby, a chemist for Crane & Co., Dalton, Mass., died on July 22 from injuries suffered in a fall at his home on July 19. Mr. Kirby was active in New England TAPPI, having been treasurer of the organization for the past two years.

Walter S. Rooney, "dean" of Albany Felt Co. salesmen, died August 23 in the Glens Falls Hospital after a prolonged illness. Mr. Rooney joined the Albany Felt Co. in 1918 and travelled extensively throughout the country. He also made several trips to Mexico, Hawaii and Japan, visiting paper and paperboard mills there. Later he was assigned exclusively to the southern territory.

Upon his retirement in 1954, he was made an honorary member of the Superintendents Ass'n., the only representative of a felt company to receive such an honor.

Since his retirement, his summer home has been Pilot Knob on Lake George, N. Y. He spent his winters in Winter Park, Fla.

Harry H. Bodek, 51, head of the service and sales department of the National Container Corp., Bristol, Pa., died August 16 at his home.

Irwin A. Reiss, 56, vice president and general manager of the Orchard Pacific Paper Co. of Los Angeles, died August 18 of a heart condition. He became ill at his office early in the morning and died at a Los Angeles hospital.

PJT NEWS OF CONVERTERS

C. L. Elliott

Continental Can Names Acting Mgr. at Passaic

C. L. Elliott has been appointed acting manager of the Passaic, N. J., can plant of Continental Can Co. Mr. Elliott was formerly assistant manager of the company's Houston, Tex., can plant.

The Passaic plant makes such metal specialty cans as those for aspirin, powders, bandages, tobacco and lighter fluid.

I-P and Union Bag-Camp Take Over Cargal, Ltd.

International Paper Co. and Union Bag-Camp Paper Corp. have assumed management and control of Cargal, Ltd., an Israeli corrugated container manufacturing concern.

The former Cargal company late last year started operations at a new 365,000-square-foot plant at Lod, Israel.

Ennis Picks New Name

Ennis Business Forms, Inc., is the new name of the 50-year-old Ennis Tag & Salesbooks Co. at Ennis.

The new name more properly defines the company's current operations, explained Garner Dunkerly, president. The firm also changed the name of its American Carbon Paper Manufacturing Co. to Ennis Carbon Paper Co. Ennis Tab Card Co. and Dunlee Paper Products have been incorporated into the paper company.

One of the largest business form manufacturers, Ennis has plants at Ennis, Chatham, Va., and Paso Robles, Calif.

Labelon Tape Plans Move to Victor, N.Y.

The Labelon Tape Co. of 20 Greenleaf St., Rochester, N. Y., is planning to move to Victor, N. Y.

E. B. Brewster, president of the firm, emphasized in his announcement that this is a complete move, not a branch operation. Expansion purposes prompted the move of the 30-year-old firm, he said. Labelon manufactures carbon papers, pressure sensitive tape and heat seal papers.

Construction of the new plant is expected to take about two years.

Delmar Firm Sold To Stone Container

Delmar Paper Box Co., 34-year-old Cincinnati firm at 4628 Red Bank Rd., has been acquired by Stone Container Corp., Chicago, for an undisclosed amount of cash.

The purchase was announced recently in Chicago by Norman H. Stone, president and chairman of Stone. The executive said the purchase ". . . will provide our company with a long-desired nucleus for expansion of our folding box sales in Southern Ohio and bordering states."

Ira Pirman, retiring Delmar president, will continue to serve the Cincinnati operation as a consultant. Delmar will be managed by Ralph Pirman as a division of Stone.

The Cincinnati plant employs approximately 70 persons.

Stone Container (American Exchange. 1958 sales, $35,915,036; net $1,524,051) owns and operates 11 paper mills and plants in Illinois, Indiana, Michigan, Ohio, Pennsylvania and Alabama. It has 2200 employees.

Schoettle Co. Opens New Carton Plant

Edwin J. Schoettle Co., Philadelphia, Pa., opened for business in its new suburban plant at North Wales on August 31. The new $1,300,000 plant was designed to replace a nine-story facility at 533 N. 11th Street. This is the third move for the company since its founding in 1861.

The company manufactures fold-

ing paper cartons used in the marketing of a vast quantity of branded packaged goods, with special emphasis on the manufacture of paraffin coated cartons.

According to Douglas T. Neale, Schoettle president, "the new building will give us space to handle at least 50 per cent more business with room available for additions. We could eventually triple our present capacity."

The move to a modern facility and increased production capacity follows the company's gradual expansion of its marketing area to include most of the Eastern half of the country with sales offices in New York City and Boston, as well as in the main plant.

Addition of lithographic printing equipment and a steady increase in sales to better than 25 per cent above the level of five years ago made the move imperative.

The building, designed by Vincent G. Kling, Philadelphia architect, is located on an 18-acre site. It provides 145,000 square feet of manufacturing space in one giant rectangle, with a parallel 11,000 square feet office connected to the main building by a passageway.

Brewer Resigns Post At Container Corp.

The resignation of Donald H. Brewer, senior vice president, Container Corp. of America, has been announced. Since his appointment in 1954, Mr. Brewer has been in charge of the company's container division.

Mr. Brewer joined Container Corp. in 1934 at its Ogden Avenue corrugated shipping container plant in Chicago. Prior to his appointment as senior vice president in 1954, he held these posts, among others: first vice president of the company' subsidiary in Chattanooga, Tenn., the O. B. Andrews Co.; general manager of the central folding carton and boxboard division, with headquarters in Chicago; and vice president of Container Corp. in 1952.

Harry E. Miles, vice president, will be responsible for all the company's corrugated shipping container plants with the exception of West Coast properties. In addition, Mr. Miles will continue to be responsible for national coordination of sales policies in the Container Division. He was formerly general manager of the company's Mengel corrugated box division, and was elected vice president of Container Corp. in 1958. He will continue to make his headquarters in Louisville, Ky.

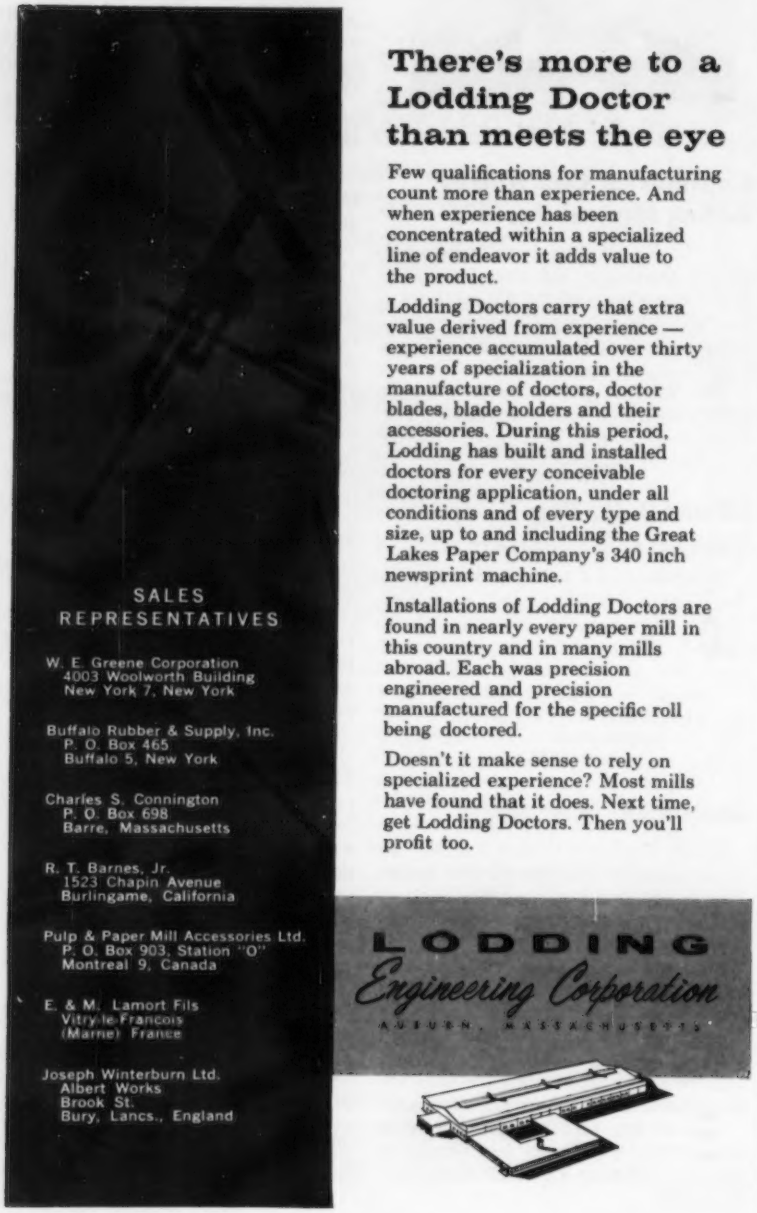
Mr. Schoenhofen, senior vice president of the company's folding carton and boxboard divisions, now has overall responsibility for the container division.

Champion Paper & Fibre Forms Planning Staff

Formation of a six-man planning staff for the converting products group of The Champion Paper and Fibre Co., Hamilton, Ohio, has been announced by Reuben B. Robertson, Jr., company president.

Assisting Dwight J. Thomson, executive vice president, converting products, the planning staff will include: Charles G. Ellington, director, Robert A. Koenig, John M. Stevenson, William A. Pogue, Harvey H. Haines and Robert D. Keppler.

The converting products groups is responsible for the marketing of Champion envelope, tablet, pulp and paper board grades, working closely with the company's converting subsidiaries and affiliates.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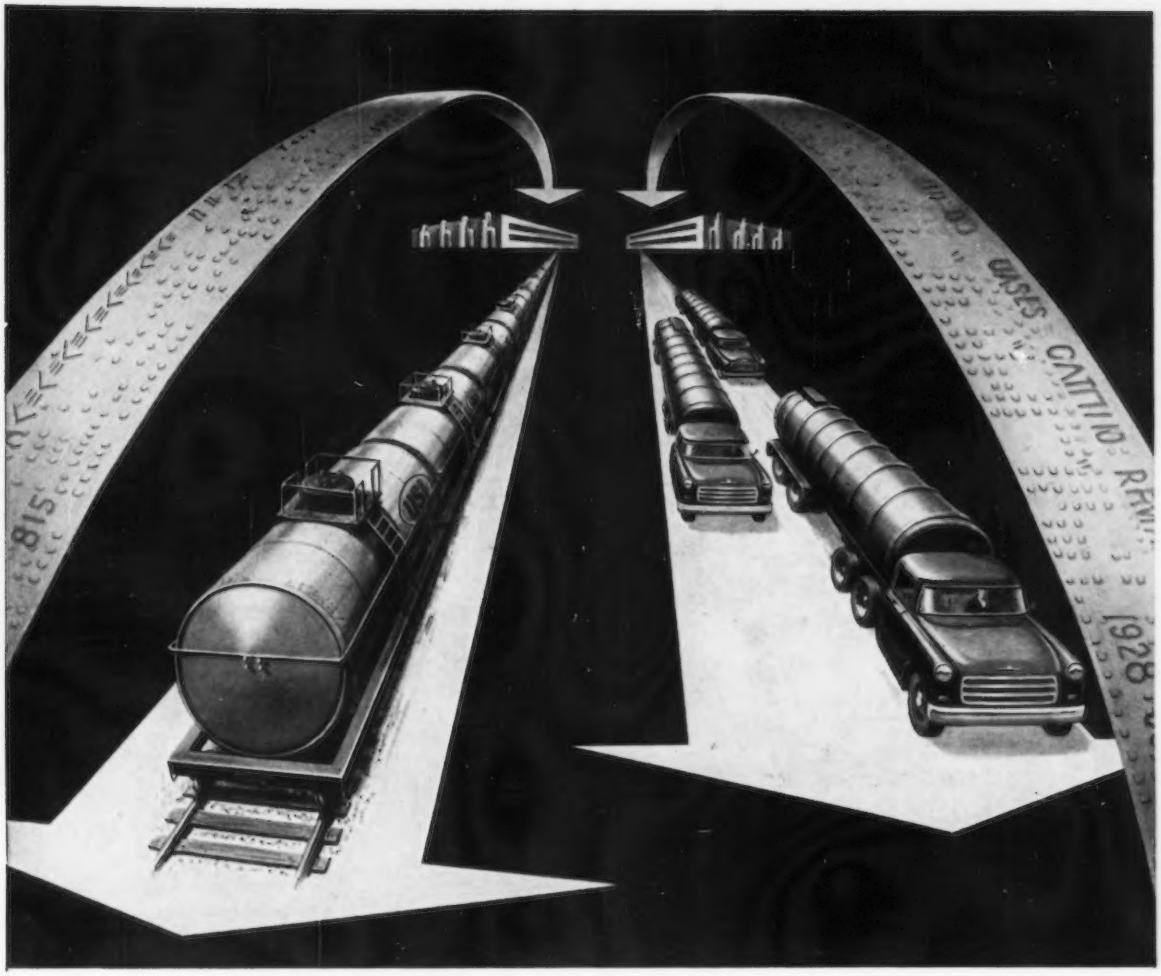

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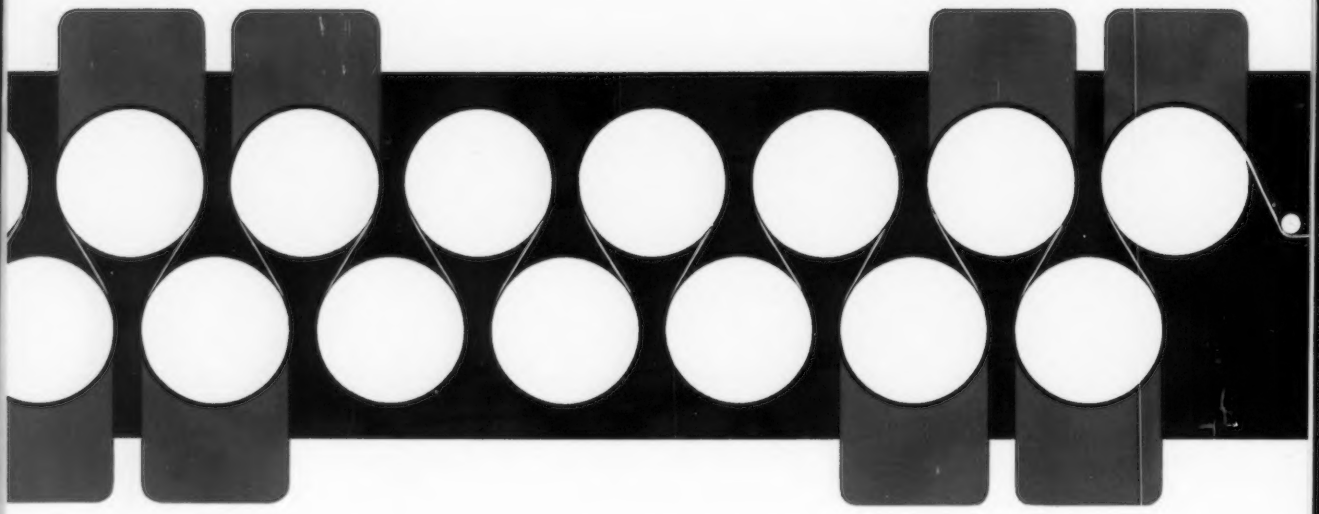

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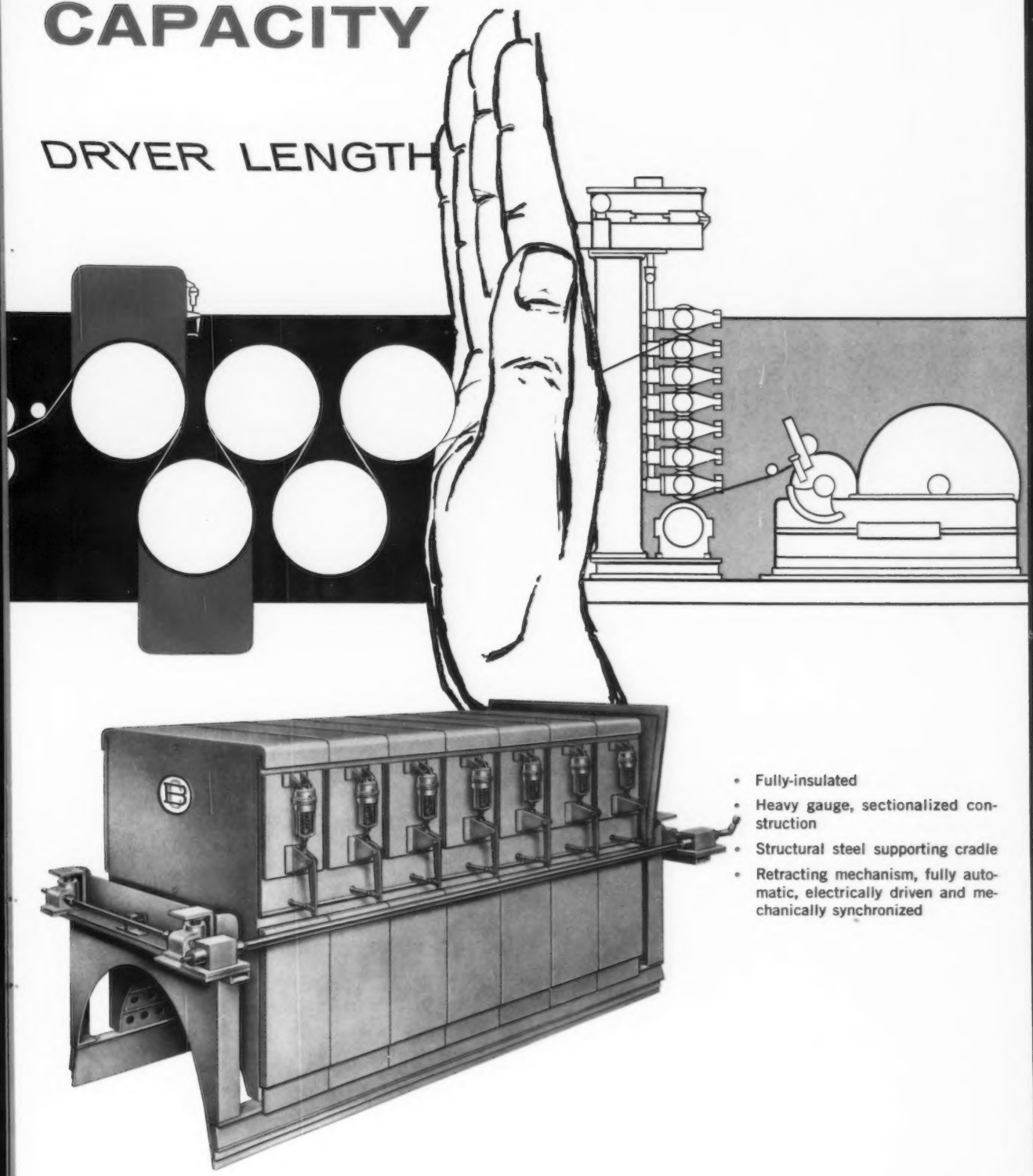

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PAPER & BOARD MACHINES

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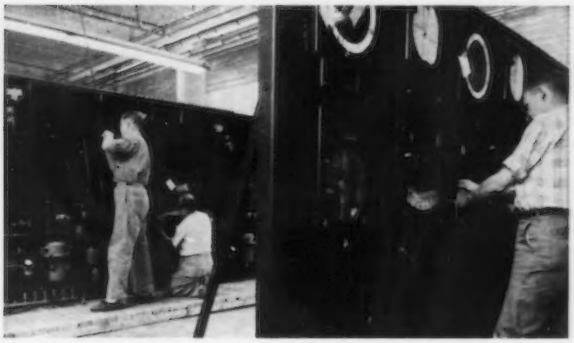

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A New Sulphite Pulping Process And a New Pulp

World's oldest company pioneers in a new sulphite process applicable to all woods, hard and soft. An on-the-spot report by the editor.

John C. W. Evans,
Editor, Paper Trade Journal

The Swedish company, Stora Kopparberg, has developed one of the most interesting pulps and the new pulping process of the century. Stora's personnel at its Skutskär mill have, with the guidance and help of the company's research department at Falun, undoubtedly done some of the most extensive pioneering on a mill scale with the sulphite process since the first commercial sulphite mill was built in Sweden in 1874.

The new process, which was specially developed to handle pine pulpwood, has turned out to produce a premium type of pulp in a method applicable to all types of woods, resinous or otherwise.

Results and the flexibility of the process depend on the use of a highly soluble base for the cooking liquor, and for this sodium was selected as most advantageous. Interest in the process therefore revolves around two principal points, a two-stage cooking method and the system for recovery of the sodium base and sulphur used in pulping.

Heart of Stora Process

The key principle of the new pulping method, developed for the Swedish problem of an excess of pine in certain areas, is a two-stage cooking process which avoids the phenolic condensation reaction, the principal problem in pulping resinous woods. This is accomplished by first sulphonating the lignin under only slightly acid conditions and then lowering the pH in the second stage for completion of the pulping operation. Extensive pilot plant experience would indicate that the process would also apply to our West Coast Douglas-fir which has been universally considered as not pulpable by sulphite methods.

Cooking Method

Cooking is carried on at present in six digesters of 150 cubic meters or 5293 cubic feet each. These are equipped for indirect cooking and forced circulation. Because of the sodium base used, conventional lining of the digester is inadequate and carbon bricks are used with plastic mortar.

Charging of the digester is conventional with Swenson chip packers. However in addition to the cooking liquor the "drawn liquor" from the first cooking stage is also added. This dilution is made possible by the use of an initial cooking acid of high strength. The cooking acid used is a mixture of sodium sulphite and sodium bisulphite with no "free" sulphur dioxide. The key to this new process is that cooking is carried on in two stages, the first under only slightly acid (pH about 6) conditions, and the second at much lower pH. This is very different from the Finnish Sivola two-stage sulphite process used for dissolving pulp, where the first stage is acid and the second well over on the alkaline side.

The first or mildly acid stage is carried on for several hours, depend-on type of pulp desired. At the conclusion of this stage, most of the free liquor is drained from the digester and liquid sulphur dioxide is injected for the second stage. Total cooking time "cover to cover" is about 14 hours. But in comparing this cooking time with the conventional North American operation, it must be borne in mind that in Europe, even for conventional calcium base cooks, much longer cooking times are used in the interest of obtaining premium quality pulps.

At Skutskär higher cooking pressures than ordinary are used. However, this is to aid the pulping of pine. It is thought that, for pulping the normal softwoods used in the sulphite process, conventional pressures would be used.

At conclusion of the cooking, the pulp is blown to diffusers and washed with several "decantings." The diffusers are a modern version of the sulphite "blow-pit." They are tall cylindrical wood-stave tanks with stainless steel drainer bottoms. The pulp is flushed from the diffusers to storage bins.

Jonsson vibratory screens are used for knotting. These are followed by fine screening in two stages with Biffar centrifugal screens.

Sulphite Bleaching Plant

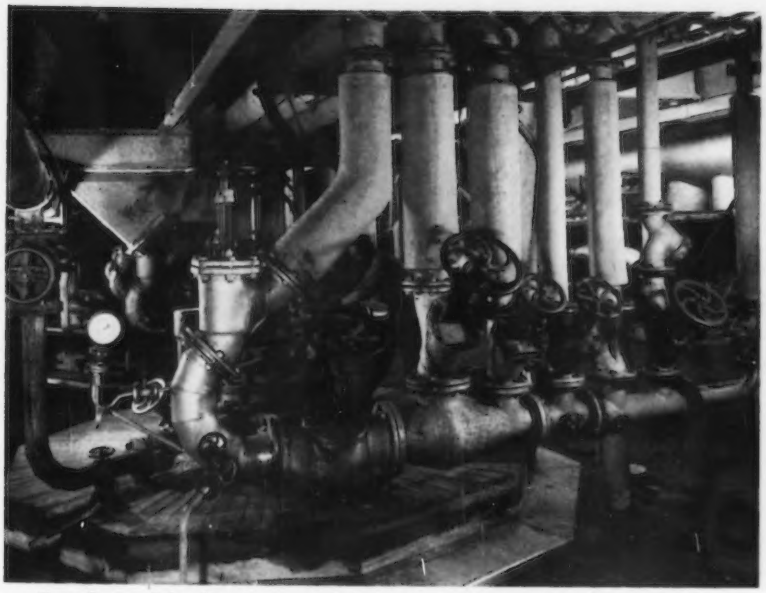
The new bleach plant for Stora sulphite is unique in many respects, but most notable is the fact that the pulp is treated in six stages so as not to damage any of the advantageous characteristics obtained in the pulping stages. This is double the number of stages conventionally used for bleaching sulphite, and as far as we know, a larger number of steps than is used anywhere else to bleach sulphite pulp.

The bleaching stages are:

1. Chlorination

BACKGROUND ON SKUTSKAR

Stora Kopparberg started its industrial activities at Skutskär in 1886 when it took over a local sawmill. This soon developed into Sweden's, and for a time Europe's, largest sawmill. In this way natural conditions were created for the setting-up of a pulp industry, and in 1894 a kraft mill was started up at Skutskär. At first, the raw material was based on tailings from the saw mill operations. In 1899 a sulphite mill was added to the kraft mill. The company is slightly older than this by more than 600 years, having been incorporated in 1228 and founded sometime before that, making it the oldest company in the world still in business today.



Top of one of the digesters used in Stora's two-stage sulphite pulping process.

2. Caustic extraction
3. Chlorine dioxide
4. Caustic extraction
5. Chlorine dioxide
6. Soaking

It is of particular significance that the mill does not use a hypochlorite stage of any type on the sulphite.

Bleach plant operations are designed to eliminate any of the "pitch problems" which are typical of sulphite pulp. Bleaching towers are either tile or rubber lined. Towers are of the upward flow with Impco type pumps and Kamyr mixers. Kamyr new type valveless washers and deckers are used. On the new washers consistencies up to 17 per cent are obtained without use of pressure rolls. Specially purified water is used in all the bleaching stages. This results in the very low ash content of Stora 59 and its very good aging properties. There is a very high degree of instrumentation using Leeds & Northrup and Fischer & Porter instruments and Kalle consistency regulators.

Following bleaching, any remaining dirt particles are removed with three stages of centrifugal cleaners. Fiber recovery is facilitated by water injection at the last stage.

The resulting pulp has a G.E. brightness of 92 to 93. Pulp strength compared with strongest commercial bleached sulphite is greater in all respects and is close to bleached kraft, excepting for tear.

Recovery Process Simplified

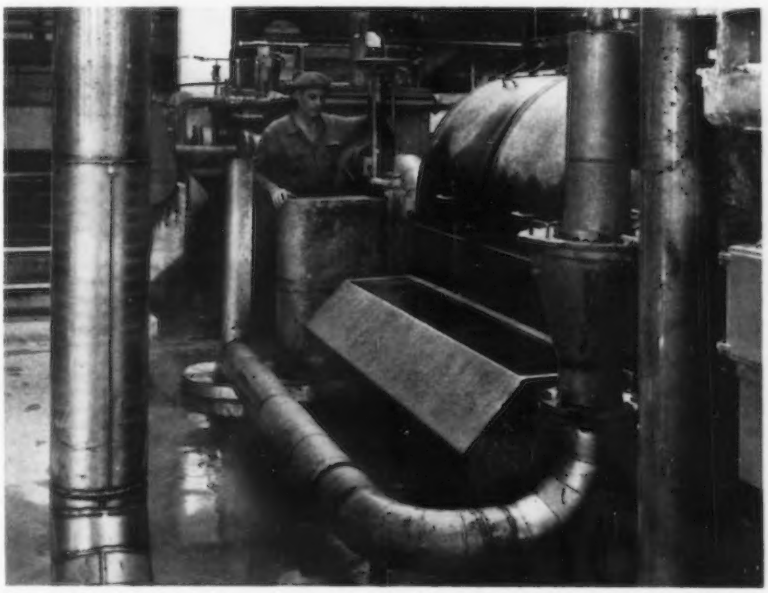
The heart of the process, as it must be with any system using sodium as a base, rests with the method of its recovery. Reduced to its simplest terms, the Stora recovery process, developed after many years of extensive pilot plant work and full scale mill experimentation is as follows: First conventional evaporation and burning of the liquor followed by dissolving of the resultant smelt. The smelt is then carbonated with CO_2 gas to remove sulphides. The resulting carbonated solution is then heated and reacted with sodium bisulphite solution to strip off the CO_2 and the solution obtained thereby, containing chiefly sodium sulphite (Na_2SO_3), is sent to the cooking acid storage tank.

The gases which result from the previously mentioned carbonation stage, i.e. H_2S and CO_2 (here is where they differ from the North American type of solution to the H_2S problem) enter into a Claus reactor (classic SO_2-H_2S reaction) where SO_2 is added. End product of this reaction is liquid sulphur.

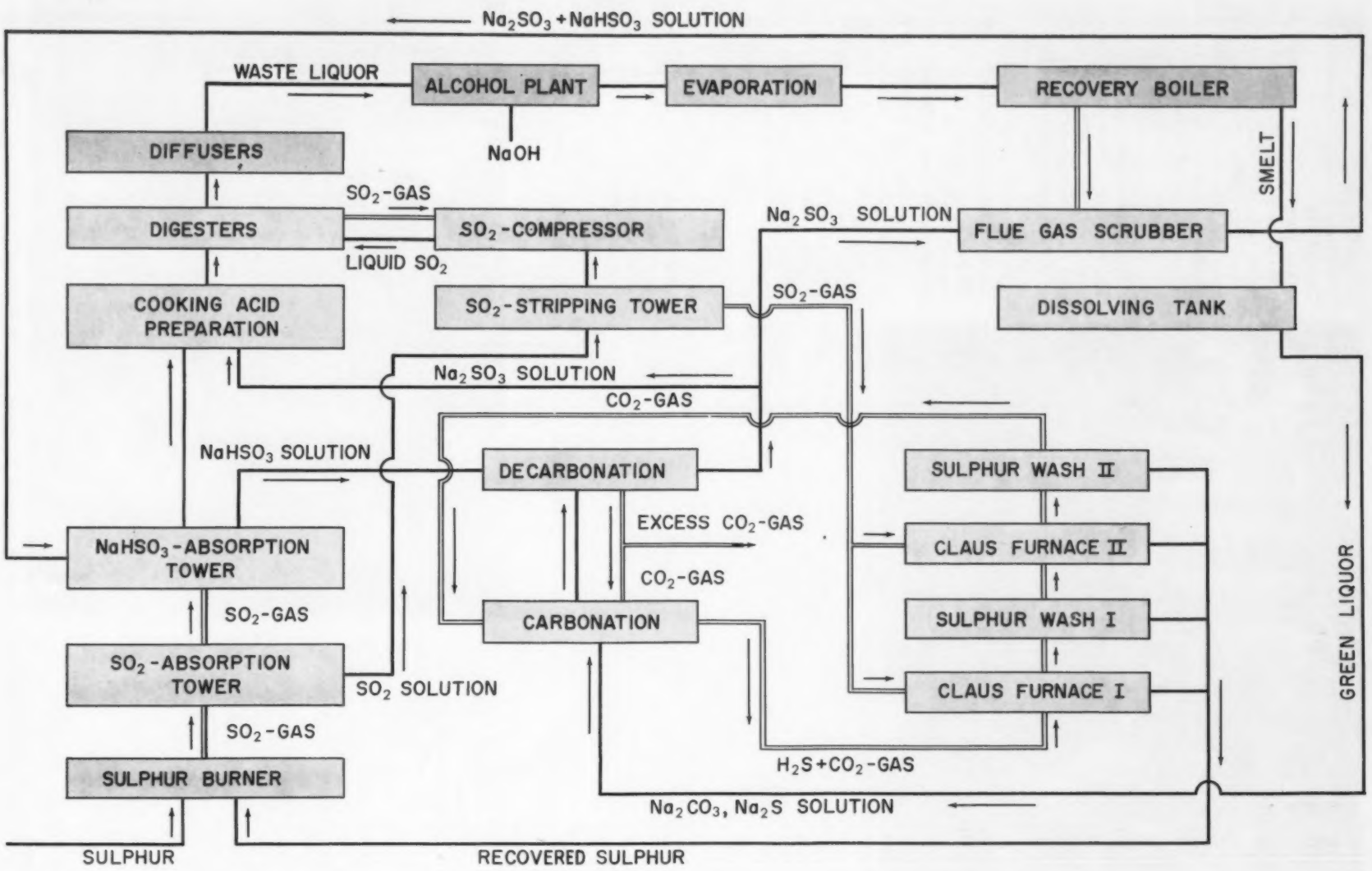
The liquid sulphur is then burned. The resulting sulphur dioxide gas is used for three purposes (1) conversion of some sodium sulphite to bisulphite for the cooking liquor. (2) In the Claus reactor to produce sulphur with the hydrogen sulphide. (3) Liquefied for use in the second cooking stage.

Recovery Process in Detail

A more detailed picture of the recovery process is shown in the accompanying flow sheet. The spent liquor from the cooking operation is evaporated and then burned in a typical recovery furnace. The resulting smelt, principally sodium carbonate and sodium sulphide, is dissolved in water as in the kraft process and passed through a clarifier. The purified solution is then sent to a carbonation tower where it is treated with carbon dioxide to remove the sulphides as hydrogen sulphide gas. The gas from the top of the tower, a mixture of hydrogen sulphide and carbon dioxide is passed to a Claus furnace where pure sulphur dioxide is added. The result of

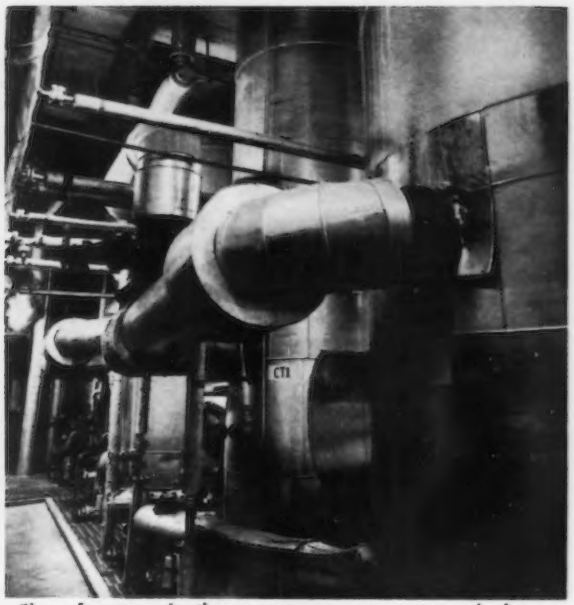


Stora 59 (sulphite) is cleaned prior to bleaching with Biffar and Lindblad screens.



STORA RECOVERY PROCESS AND COOKING ACID PREPARATION SYSTEMS

B. Lunden, chief engineer at Skutskär, the editor, and P. Collin, general manager of the mill, inspect stripping towers in the recovery system.



Claus furnaces, in the recovery process, convert hydrogen sulphide with sulphur dioxide to liquid sulphur which is sent to the acid plant for sulphur make-up.

the reaction between the two sulphur compounds is water and liquid sulphur. The carbon dioxide is not consumed and is recycled back to the stripping stage. The liquid sulphur is pumped to a sulphur burner where make-up sulphur is also added.

The carbonated "green" liquor from the carbonation tower, which now contains the sodium as a mixture of sodium carbonate and sodium bicarbonate, is sent to a tower where by the addition of a sodium bisulphite from cooking liquor preparation and heat, the liquor is decarbonated giving a solution of sodium sulphite and the evolution of carbon dioxide gas which latter is returned to the carbonation tower. The resulting sodium sulphite solution is sent to cooking acid preparation and to the flue gas scrubber.

It is important that the sulphur dioxide sent to the compressors (to produce liquid SO_2 for the second stage cook) and to the Claus reactor be free of oxygen and inert gases. This is accomplished by passing the gas from the sulphur burner through an absorption tower which produces an aqueous solution of sulphur dioxide.

The solution is then heated in a stripper thus producing pure sulphur dioxide gas, part of which is passed through a dryer and on to a compressor. The balance of the gas (undried) is sent to the Claus reactor. Sulphur dioxide relieved during the second cooking stage passes through the same dryer and compressor as the gas from the stripper.

Make-up sodium and some of the sulphur requirements can be provided in the form of saltcake by addition to the thick liquor fed the recovery furnace. An electrostatic precipitator on the flue gas recovers sodium sulphate. The precipitator is followed by a scrubber which is used to recover heat and sulphur dioxide. The resulting solution of sodium sulphite and sodium bisulphite is sent to the sulphiting tower previous to cooking liquor storage.

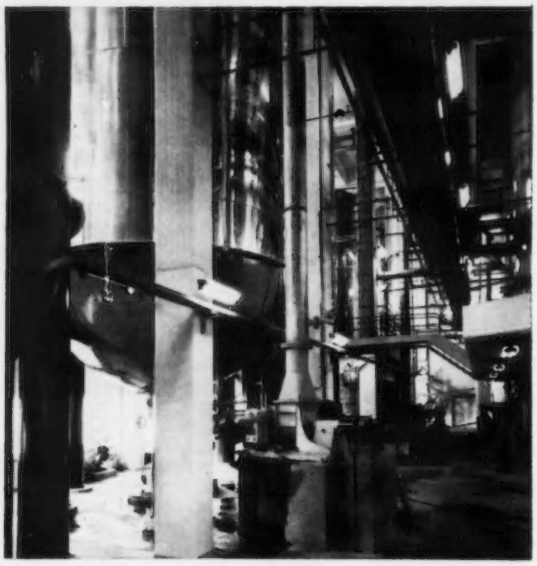
At the Skutskär mill no make-up saltcake is added before the recovery furnace. This is because the plant operates an alcohol fermentation plant on the liquor prior to evaporation and burning. This requires that the liquor be neutralized. The caustic soda used for this purpose provides the necessary sodium make-up for losses in the system.

The recovery process used at Skutskär is not something new just being tried out. Although the process as presently operated has only had its final form for a year, Stora has been evolving final details of the proc-

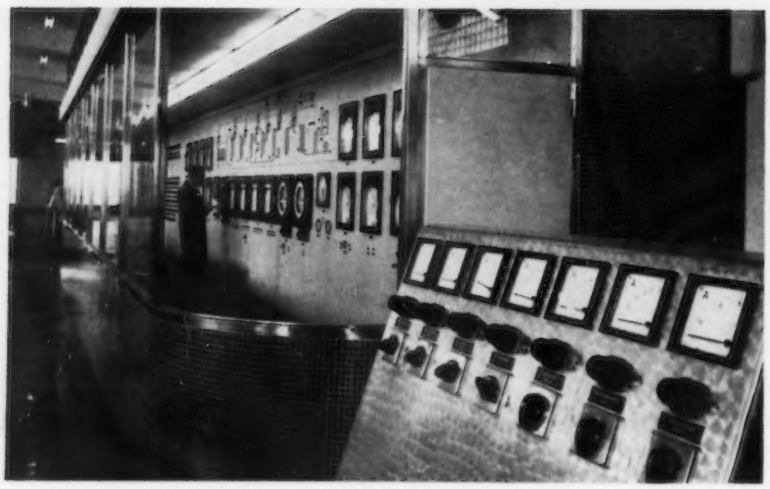
Control panel handles recovery processes such as carbonation, stripping, Claus reaction.

New sulphite mill bleach plant has a number of unique features including six separate bleaching stages.

View of sulphite bleaching towers from the ground floor.



Bleach plant instrument panel is totally enclosed, yet completely visible.



ess on a full mill scale since 1955. In the October 17, 1955 issue of this magazine, the original recovery process as then installed at the mill was described. The principal change made has been in the method of converting the hydrogen sulphide. At that time this gas was burned directly to provide sulphur dioxide instead of using the Claus reaction as now. In addition the method of operation and equipment has been considerably simplified. Development of the process has, of course been backed up by prior and continuing research at the company's research laboratories and pilot plant at Falun.

Pulping Advantages

The advantages claimed for the Stora process are that the crucial problem normal to sulphite pulping is avoided, namely the tendency, particularly with resinous woods, to form insolubles during sulphonation. In the Stora process, in the first cooking stage, under only very slightly acid conditions, i.e. at a pH just below 7, the condensation reactions are held at a very minimum while sulphonation of the lignin (to make it soluble) is going on, so that in the second stage dissolving of the incrustants (i.e. materials in the wood which hold the individual fibers together) can take place under conditions which do not produce these insoluble condensation products. This has been the crux of the problem of pulping pine, Douglas-fir, etc., as they have a substantial proportion of phenolic resins which under highly acid conditions produce an insoluble resin. (The principle in producing Bakelite plastics, which we do not want in making pulp). The mild con-

Top of one of the eight kraft digesters used to produce Stora 32.

ditions of this cooking process lessen hydrolytic destruction of the carbohydrate components in the wood which is equally advantageous in pulping all types of softwood.

Pulp Quality Advantages

The process is much more flexible than kraft or ordinary one stage sulphite cooking. With two different cooking stages, the proportion of the pulping done in each stage and the conditions therein can be almost infinitely varied. This permits the production of pulp with a much wider range of properties.

The new Stora pulp has many advantages over conventional sulphite, in fact it seems to combine many of the advantages of kraft and sulphite. For many uses its properties are superior to kraft, such as brightness, softness, ease of beating and sheet formation. Only in the case of strength characteristics, chiefly tear, does the kraft have advantages and for many uses this is outweighed by the other superior characteristics of this new pulp. Not to be ignored is the fact that color reversion is very low. This of course can be ascribed chiefly to the unique bleaching system, although the pulping process has some bearing.

Economic Advantages

The process permits pulping of pine by the sulphite method, although the process is equally applicable to non-resinous softwoods and hardwoods. The following comments comparing cost of pulping pine by the Stora process with conventional kraft (since at Skutskär both processes are used side by side using the same wood and with the same high degree of emphasis on pulp quality for both types of pulp) are given: Yield is about 15 per cent higher than for kraft (about five to ten per cent higher than for regular sulphite) and due to the relative ease of bleaching of sulphite versus kraft, bleaching costs are considerably less than for the latter. The savings on two such important cost items as wood and bleaching definitely weigh operating costs on the side of the Stora sulphite process.

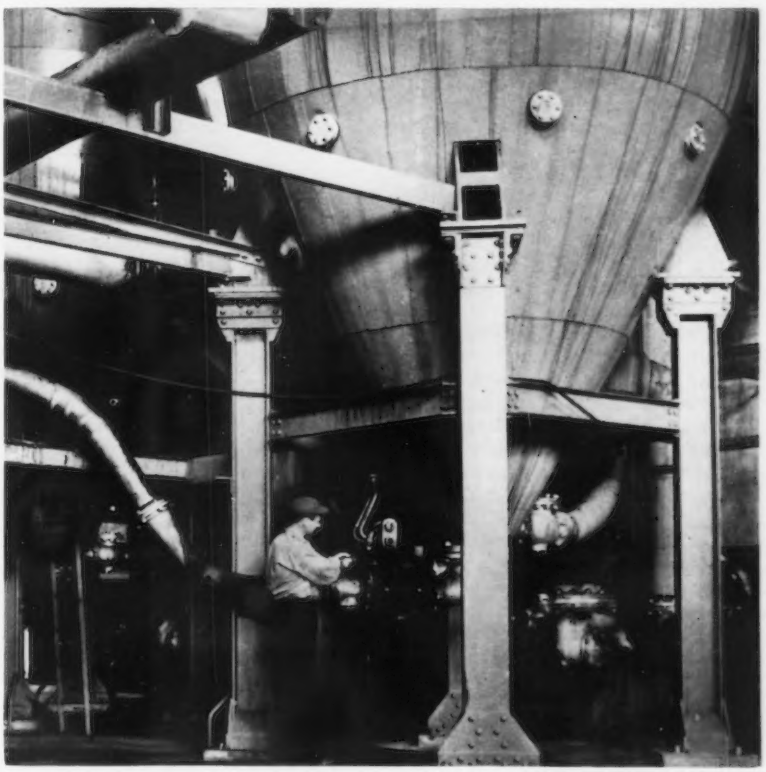
Recovery system operating costs compare favorably with kraft. On chemical make-up, Stora officials at Skutskär state that saltcake make-up is the same or less than for good kraft mill operation. Sulphur consumption is only about 30 per cent of that for good calcium base sulphite mill operation.

Comparing the capital costs for comparable sulphite and kraft mill operations, it appears that (1) cost of equipment for purely pulping operations would be slightly higher; (2) recovery system costs would be slightly higher for the Stora process due to the need for more stainless steel equipment; (3) cost of bleaching equipment is less due to the relative ease of bleaching sulphite versus kraft.

It would appear that the slightly higher capital costs for the Stora process over kraft would be more than compensated for by the much lower operating costs.

Comparing and Evaluating

In reporting the advantages of the Stora sulphite process it is obvious that the author has had to lean



Base of one of the kraft digesters showing the circulating system.

Crane carries wood right into the wood room (at rear) and drops it into barkers.

heavily on the opinions of the officials of Stora's Skutskär mill. It should be borne in mind in this connection that the mill also produces a premium grade kraft and therefore the mill executives are in a position to be unbiased in their comments on kraft versus the new Stora sulphite. Also adding value to their comments is the fact that prior to conversion, the sulphite mill was a conventional calcium base operation.

The company has demonstrated its confidence in the new pulping process by building a bleaching plant with a capacity approximately double that of the present pulping capacity (150 tons per day). Stora is now engaged in doubling the digester output and building an entirely new pulp drying department of the latest design to handle the entire bleached sulphite pulp output (300 tons per day), leaving the existing pulp drying facilities for its bleached kraft pulp production.

As a further proof of Stora's confidence in the new process, it is planned that the entire output of its new associated company in Nova Scotia, Canada, Nova Scotia Pulp Ltd., which is building a mill on the Canso Straits of Nova Scotia, will be devoted to this new pulping and recovery method. It is of particular interest that the new Stora process, which fits in so well with the need of the company's Skutskär mill to use more pine pulpwood, is completely irrelevant insofar as the Canadian mill is concerned since the only important species in the woods limits proposed for the new mill are spruce and balsam. Apparently the company believes that this process has definite advantages for the pulping of all softwoods and is building this new mill to prove it.

Stora shipped 1500 cords of Nova Scotia balsam fir and spruce to Skutskär late last year. Full scale mill tests of the new process on this wood were very successful.

Stora Kraft Operation

As previously mentioned Stora has been making kraft pulp at Skutskär for 65 years. The wood used in the kraft process is pine, which comes mainly from the company's own forests, and is barked in a stationary friction barker of the Finshyttan type. From there it is transported to the chippers. From the chip bins of 1800 cubic meters each, the digesters are fed by means of conveyor belts that are operated from the digester floor. These are eight all-welded digesters.

Here pulp is cooked for a comparatively (by North American standards) long cooking time at a low alkali concentration, which Stora thinks necessary to obtain the highest possible strength levels in the resultant pulp.

After diffuser washing, the pulp is screened on Cowan and Biffar screens before it is pumped into the bleaching plant. Of special interest is the fact that the kraft digesters at Skutskär which are 20 years old show no signs of corrosion whatsoever, in marked contrast to North American experience.

The kraft pulp is bleached in an eight-stage bleach plant with the following stages:

1. Chlorination
2. Caustic extraction
3. Sodium hypochlorite
4. Caustic extraction
5. Chlorine dioxide
6. Caustic extraction
7. Chlorine dioxide
8. Soaking

It is believed that this was the first bleach plant anywhere to use chlorine dioxide.

The resulting premium grade pulp is that compared previously with the new Stora sulphite pulp.

Woodhandling

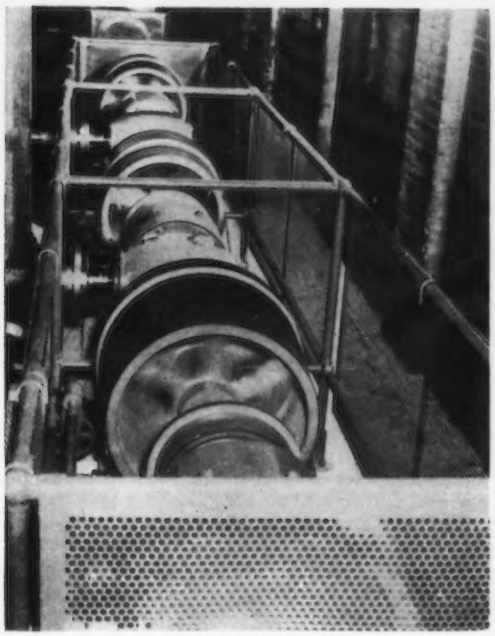
One woodhandling system is used for both the sulphite and kraft mills. The company also has large sawmills at Skutskär and normally only wood too small for the sawmills is sent to the pulp mills. Pulpwood sticks in ten foot lengths arrive by river and truck.

Diameter of these ranges from one and a half to 20 inches. The small diameter of the logs presents special barking problems, for example these thin sticks would be badly broken in a barking drum.

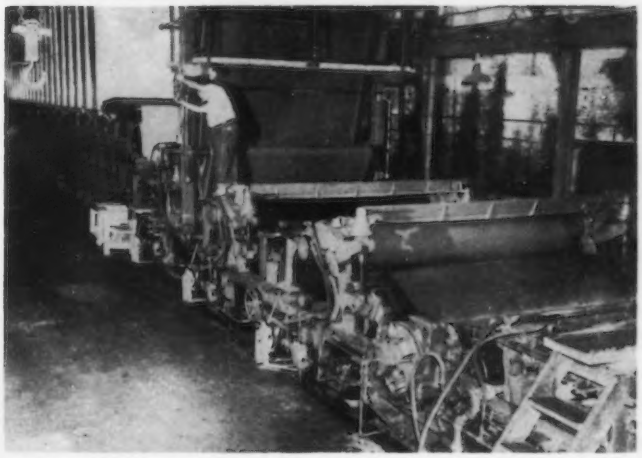
The solution adopted was the use of large friction pocket-type barkers of the Finshyttan type. The logs are removed from the rail cars or trucks by a clamp type of overhead bridge crane and deposited in the barker pockets. When the wood has been debarked, the same crane moves the logs from the barker to rail trucks which feed the chipper plants. There are four KMW chippers, two for sulphite and two for kraft.

Hamersley Modernization of Number Three Machine

This summer Hamersley Mfg. Co., Garfield, N. J., completed the rebuilding of its number three machine. Hamersley manufactures glassine and greaseproof grades.

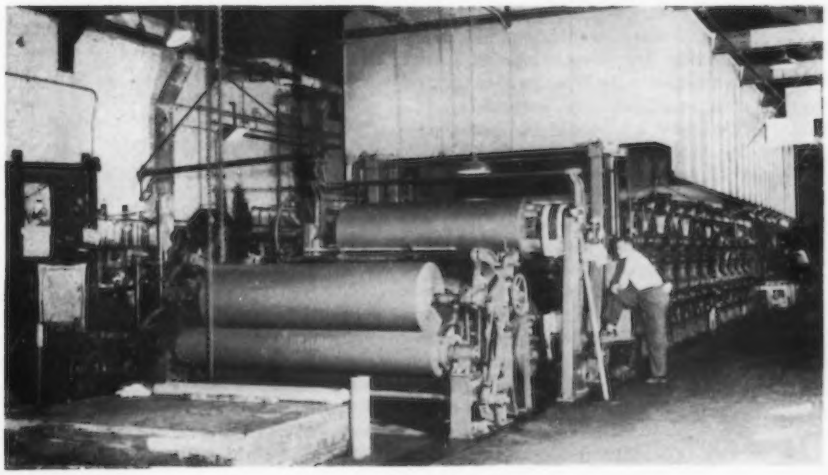


New spiral gear Sandy Hill drive with Fairwick Airflex clutches and with two inch plastic core drive belts.



Press section which has been rearranged with one press eliminated to provide space for more dryers.

Two new regular dryers and a baby dryer have been added at the wet end.



Winder, reel and the dryers, as were the other sections of the machines, have been equipped with new drives.

The new HDLS paste process for corrugators . . .

Makes Better Adhesive, Faster

Edward H. Hill,
Technical Representative to the Paper Industry,
Corn Products Sales Co.

The new "Hot Drop Low Solids" process for making corrugated board adhesive, developed and introduced by Corn Products Co. in 1957 and now being used in over 30 plants in the U. S., is well on its way to becoming a standard industry method for preparing corrugating adhesive. Over 90 per cent of the plants that have run tests of the process so far have adopted it.

The process requires no new equipment. The standard Henry Pratt mixer, in either the 333-gal. or 666-gal. capacity size, will prepare the new formulations. The only change recommended is that the regular 5-h.p. motor on the Francis tank of the 666-gal. mixer be replaced with one of 7.5-h.p. or 10-h.p. rating.

Advantages of HDLS

The advantages of the HDLS process have been impressively substantiated in regular production runs on various types of board, under various conditions, using paste made by regular plant personnel. Some of the first plants to adopt the new method have been using it exclusively for over two years.

Operating experience and cost figures show appreciable savings in time and raw materials. The new process cuts paste mixing time by approximately 40 per cent. One low-cost starch is used and the amount consumed averages about 17-20 per cent less. Caustic consumption is reduced by approximately 11 per cent. These savings have been accompanied by improved paste quality and, consequently, improvement in the quality of board produced. Board is flatter, has better flat crush, and is less subject to warping. There is less scrap and waste. Pin adhesion is increased, and board exhibits a more uniform pattern on the machine.

Machine speeds can also be raised with no change in heating capacity, and the cost per 1,000 sq. ft. of board is lower. It is impossible to state now what the range of savings is, but one example that probably strikes an average, points to a 3 to 5c per 1,000 sq. ft. saving on double-face board.

Paste made by the HDLS process has consistently shown more initial tack and is faster drying. Its solids content is low—approximately 16.5 per cent compared to the conventional average of 22 per cent.

The HDLS process not only produces a more stable viscosity paste, even under adverse pumping conditions or excessive agitation, it also simplifies viscosity control by substituting holding time in the Francis tank, as the controlling factor, in place of formula modifications. Further, no viscosity stabilizers are required. Pastes display more uniform viscosity at the corrugator, with less breakdown from circulation.

Development of Process

The HDLS process had its beginning with Corn Products in the spring of 1957. At that time it was found that, by using a special starch such as an ethylene oxide treated starch in the carrier portion, an improved adhesive could be made, provided the carrier was made by cooking the modified starch with borax, and then adding the caustic. However, with this formula, the cost per pound of starch was higher and more skill and time were required for preparation. At first, only the lower tank was used in the mixing process, and it was believed necessary to cool the carrier before adding the bulk of the slurry starch. This meant cooking the carrier in the bottom tank and adding water to cool the carrier portion before the slurry starch could be added. The slurry starch had to be added very slowly, and this consumed considerable time. If added too fast, lumps which were practically impossible to break up would develop. In some cases trial runs were successful, but more often they ended with the patience of the management and operators becoming so strained that the starch men were either asked to leave, or they left voluntarily, knowing it was necessary to keep peace.

In the early development stages it was realized that for the process to become universal, it had to be fast. Subsequent trial runs were made by using both the top and bottom tanks of the standard Pratt mixer. The carrier was made in the top tank and dropped into the bottom tank where enough water was added to achieve the desired solids content.

The rest of the water was added to the top tank where the bulk of the starch was slurried. The slurried starch was then added slowly to the bottom tank. This method cut the time needed to mix a batch of paste, and it also decreased the lumps that formed previously when the dry starch had been added to the cooked carrier. These improvements pleased the plant management, but not the paste maker. It meant that he would have to lift all the bags used in the process up to the top tank. This requirement was to prove impractical because the paste man, naturally, wanted to streamline his job and this only complicated it.

New Process Requirements

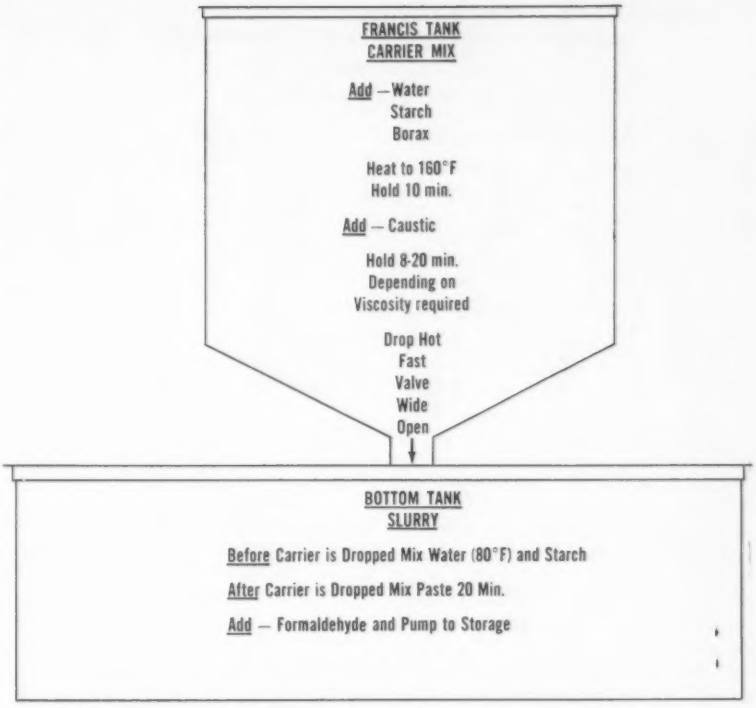
For any process to work successfully after the demonstrator has left the plant, it must please both the management and the workmen. Putting previous experience together and, after making several hurried trips to a plant using the above proc-

ess, for the purpose of correcting misinterpretations of the formula, it became apparent that the process would have to: 1 use both the top and bottom tanks; 2 be as easy on all workmen as the one formerly used; 3 improve the operating conditions; and 4 improve the quality of manufactured board as compared to the conventional process.

To meet the above requirements, the idea of dropping the hot carrier portion of the paste into the bottom tank, containing a slurry of the rest of the starch, was investigated. At that time, many starch men felt that the starch would set up, if dropped in such a manner, and the general feeling was that the tanks would certainly have to be shoveled out after the first full scale plant trial.

It was felt by those who had worked closest with the author that this would not happen. But, as an extra precautionary measure, the adhesive storage tanks in the first plant to test a full-scale batch were filled before beginning the formula preparation so that—should the unexpected happen—there would be ample time to shovel out the set-up paste before having to make more. A batch of adhesive was then made by dropping the hot carrier directly into the bottom tank.

A good paste resulted and it did not set up. To avoid the development of what may be called "fish eyes" in the paste the conventional procedure of dropping the carrier slowly into the bottom tank was followed.



Schematic drawing shows procedure for making corrugated board adhesive by new Corn Products Co. Hot Drop Low Solids method.

Basic Process Developed

After making several batches of adhesive by dropping the carrier slowly it was found that the viscosity was difficult to control. To overcome this dropping fast, with the valve in the bottom of the Francis tank wide open, was tried. This gave a much more uniform viscosity and also reduced the time needed to make a batch of adhesive. Thus, by dropping fast and using both tanks all the requirements mentioned above were satisfied, with the result that the plant management and workmen were both pleased with the process.

After running the perfected HDLS process in several plants having 333-gal. mixers, tests were then run in a 666-gal. Pratt mixer. Doubling the amount of starch, borax and caustic in the carrier was tried, but trouble developed because the amount of water could not be doubled. The standard Francis tank for the 333-gal. mixes holds 149 gal.; the Francis tank for the 666-gal. mixer holds 232 gal. This meant that the volume of water for the 666-gal. mixer was about 50 gal. short. For the 333-gal. Francis tank 100 gal. of water was called for and only 150 gal. could be added to the Francis tank of the 666-gal. mixer.

Operating Problems Solved

The result was that the motor on the Francis mixer kicked out because of the lowered fluidity of the mixture. To get around this trouble, the amount of starch in the top tank was reduced to 165 lbs. Again, good board was produced, but the desired viscosity could not be held over a long period of time. In the 333-gal. mixer 100 lbs. of starch was used in the carrier portion and 400 lbs. in the slurry portion. To avoid overloading the Francis tank mixer in the 666-gal. mixer, the carrier starch was cut to 165 lbs. and starch added to the slurry portion was increased to 835 lbs. It was felt that the inability to hold paste viscosity was caused by there not being enough starch gelatinized in the carrier portion.

The next move was to use 100 lbs. of a thin boiling starch and 100 lbs. of the special HDLS thick boiling starch in the carrier portion. This worked fine in the 666-gal. Pratt mixer, and made excellent board. However, it had the disadvantage of using two types of starch in the mix and it also raised the cost, since thin boiling starch sells for 60 cents more per 100 lbs. than the thick boiling starch.

Tests were then made using 200 lbs. of Corn Products 3123 thick boiling starch and adding a thinning agent to the carrier portion. It was found that after an addition of a few ounces of sodium perborate to the thick boiling starch in the carrier portion the motor of the Francis tank in the 666-gal. Pratt mixer no longer kicked out. The thinning agent did not appear to affect, in any way, the paste viscosity or the quality of the corrugated board.

Total mixing time listed in Table I does not include the time consumed in adding water, starch, chemicals, or the time required to bring the temperature up to 160°F. These would be approximately the same for both processes.

Tests were next made in a new plant, having a new 666-gal. mixer. It was found that the motor on the new Francis tank would carry the full load of 200 lbs. of starch without kicking out, even though no sodium perborate was added. But, rather than chance an overload on the Francis tank motor, it was—and still is—

TABLE I
COMPARISON OF CONVENTIONAL HDLS FORMULAS

(Using 666-gal. Pratt Mixer)

Carrier Portion (Francis Tank)

Conventional	HDLS
1. Add 90 gal. water	1. Add 150 gal. water
2. Add 180 lbs. starch	2. Add 200 lbs. starch
3. Add 38 lbs. caustic	3. Add 30 lbs. borax
4. Heat to 160°F. Hold 15 min.	4. Heat to 160°F. Hold 10 min.
5. Add 60 gal. water	5. Add 34 lbs. caustic
6. Mix 10 min.	6. Mix 8 min.

Slurry Portion (Bottom Tank)

1. Add 445 gal. water	1. Add 460 gal. water
2. Add 1020 lbs. starch & 30 lbs. borax	2. Add 800 lbs. starch
3. Drop carrier portion slowly (20-40 min.)	3. Drop carrier portion fast (3-10 min.) (Valve wide open)
4. Mix 20 min.	4. Mix 20 min.
5. Total starch: 1200 lbs.	5. Total starch: 1000 lbs.
6. Total mixing time: 85 min.	6. Total mixing time: 48 min.

suggested that the usual 5-h.p. motor be changed to a 7.5-h.p. or 10-h.p. motor. Most of the plants now using the HDLS process have made this change and are not using the sodium perborate.

To compare the conventional and the HDLS processes, general formulas for use in making pastes in the 666-gal. Pratt mixer are listed in Table I.

Viscosity Control

The viscosity of the finished HDLS paste can be controlled by varying the mixing time in the Francis tank, after the caustic has been added. A short holding time gives a higher paste viscosity while a long holding time gives a lower viscosity paste. The holding time to produce a desired viscosity will vary slightly from plant to plant, due to local conditions. However, after a holding time has been determined in a plant, paste can be made day after day, with only a few seconds variation in the viscosity. An example that shows the effect of holding time is given below:

Holding Time (Minutes)	Viscosity (Seconds)
7	80
10	55
20	32

Chemical Addition Constant

To be able to vary the holding time in the Francis tank to produce the desired viscosity is a considerable improvement over the conventional method, where the viscosity is controlled by varying the amount of starch and caustic. The HDLS process keeps the amount of borax, caustic, and starch constant, so that the ratio will always be the same, regardless of the desired viscosity. From experience, it has been determined that 100 lbs. of starch in the carrier portion for the 333-gal. Pratt mixer, and 200 lbs. in the 666-gal. mixer is the proper proportion. In different plants, the amount of borax and caustic will vary slightly. But, after these amounts have been established by experience, they will remain constant.

Factors to Watch

There are two factors that must be watched closely by the paste man when using the HDLS process. These are: temperature and holding time after the caustic has been added. The temperature is somewhat automatic, because the starch will gelatinize near 160°F., and the sound of the agitator will indicate when this temperature is reached. The addition of the caustic usually brings the temperature up a few degrees. The temperature of a finished batch of paste should be approximately 100°-110°F., since this is the temperature that gives the best performance at the corrugator. If the temperature in the lower tank is not around 80°F., the water should be heated so that the finished temperature will be near the desired level.

Tables II and III list HDLS formulas which can be used, with slight changes, in almost any 333 and 666-gal. two-tank Pratt mixer:

The formulas in Tables II and III are proportioned to give 28-32 seconds viscosity at the single facer and 40-45 seconds at the double facer. In some mills Globe brand starch 3121 is substituted in the same amount for 3123.

Why Does It Work?

It is difficult for the potential user of the HDLS process to believe at first that, by using less starch and less caustic, numerous advantages can be achieved. However, after the process has been demonstrated and the advantages are apparent he wants to know, "Why?"

Two theories have been advanced by way of explanation. At this writing, however, they are still only theories. They are, first, that the borax and caustic are more efficient; and, second, that a different adhesive is formed. Although its success could be due to a combination of these two, the author and originator of the process believes it is the latter theory that accounts for its superior performance.

Borax and Caustic?

If the first theory should account for more efficient results, then increasing or decreasing either the borax or the caustic should improve the process. This, however, has not been the case. By varying the borax in 100 lbs. of carrier starch from 8-20 lbs. it was found that the best board and the most stable viscosity paste were produced by using 13-16

TABLE II
HDLS FORMULA FOR PRATT 333-GAL. MIXER

Francis Top Tank	Single Facer	Double Facer
1. Add water from top of tank	13 inches	13 inches
2. Add 3123 starch. Mix well	100 lbs.	100 lbs.
3. Add borax—10 mol. Mix well	16 lbs.	16 lbs.
4. Mix and heat to 160°F.	- - - Hold 10 minutes - - -	
5. Add caustic (dissolved)	13 lbs.	17 lbs.
6. Hold after caustic is added	12 min.	8 min.
Bottom Tank		
A. Add water from top of tank (Heat to 80°F., if needed)	18 inches	18 inches
B. Add 3123 starch. Mix well	400 lbs.	400 lbs.
C. Drop carrier fast—valve wide open		
D. Mix 20 min.—then add 1 pint of formaldehyde before pumping into storage tanks.		

TABLE III
HDLS FORMULA FOR PRATT 666-GAL. MIXER

Francis Top Tank	Single Facer	Double Facer
1. Add water from top of tank	13 inches	13 inches
2. Add 3123 starch. Mix well	200 lbs.	200 lbs.
3. Add borax—10 mol. Mix well	30 lbs.	30 lbs.
4. Mix and heat to 160°F.	- - - Hold 10 minutes - - -	
5. Add caustic (dissolved)	26 lbs.	34 lbs.
6. Hold after caustic is added.	12 min.	8 min.
Bottom Tank		
A. Add water from top of tank (Heat to 80°F., if needed)	22 inches	22 inches
B. Add 3123 starch. Mix well.	800 lbs.	800 lbs.
C. Drop carrier fast—valve wide open		
D. Mix 20 min.—then add 1 quart of formaldehyde before pumping into storage tanks.		

lbs. of borax. Below 13 lbs. the paste did not have the initial tack, and did not work as well as the regular HDLS paste. Above 16 lbs. the finished board became brittle, and there were no improvements in the pin adhesion tests.

By varying the amount of caustic from 8-24 lbs. it was found, as would be expected, that the gelatinization temperature decreased as the amount of caustic was increased. From 12-15 lbs. gave the best operating conditions on the single facer, without excessive setting up in the paste pans. However, some board was made by using 20 lbs. of caustic in the single facer, and the pin adhesion test results were not improved by the additional caustic.

The governing rule has been to go as high as 15 lbs. of caustic, if no setting-up developed in the pans; but, usually, the amount has been kept to about 13 lbs. to avoid setting up. In the double facer paste, it was found that about 17 lbs. of caustic gave the best operating conditions and best quality board. More than this amount did not improve these conditions.

Different Adhesive?

In support of the preferred theory, to convert starch into simplified forms is quite easy; but to make these forms uniform requires skill, as well as art, in carefully controlling manufacturing operations. In the HDLS process, it is believed that creation of a simplified starch occurs in the making of the carrier portion, producing a new compound that has more initial tack, drys quicker than paste made by the conventional method. After the proper ratio of borax and caustic has been added to the carrier starch to make the new compound, additional amounts are not helpful. This also leads us to believe that a different compound is formed by the HDLS process. In addition to the better initial tack, the HDLS adhesive has a different color; and the fact that it will enable the operator to run faster would certainly indicate that it is a different type of adhesive.

Future of HDLS

As to the future of the HDLS process, it is felt that, within a short period of time, it will be adopted by nearly all plants that use starch in preparing their adhesives. The process could be adapted to the techniques of automation. Using the HDLS process, it would be possible to make paste automatically, by pushing a single electric button that would set off a sequence reaction. Automated equipment would add the proper amount of water, starch and chemicals; it would start the heating cycle; and it would establish the proper time cycle, so that the desired viscosity of the finished adhesive would be attained, again, automatically.

Short History of Corrugated

Corrugated materials, as distinguished from boxes, were first patented in the U. S. by Albert L. Jones, in 1871. This patent covered an unlined, fluted material that was used to protect bottles from breakage. In 1874, Oliver Long was granted a patent covering a lined, corrugated material for packing bottles, jars, and similar fragile products. At first the corrugated materials were used mostly as wrappers for bottles holding beverages and medicines. By 1895 corrugated wrappers were being used for light express and parcel post packages. The Pridham Decision, handed down by the Interstate Commerce Commission on April 6, 1914, gave the corrugated manufacturer a chance to compete against wooden boxes on an equal freight basis. Today, millions of varied products are being packed and shipped in fibre with new uses still being developed at a rapid rate.

In the beginning of the corrugated box industry, starch and flour were used as the adhesive. However, these were replaced by sodium silicate, because too much water was required to carry the starch, and the starch adhesive was slower drying. In 1934, a chemist for Stein, Hall & Co., Inc., Jordan Bauer, conceived the idea which led to the patenting of the Stein-Hall process, now known to practically all corrugated board manufacturers and is referred to as the "in situ" gelatinization process. A small amount of the total starch in the paste formula is cooked and used as a carrier for the rest of the uncooked, suspended starch, to the point of contact. Here, heat and pressure create a bond between the sheets.

"How about a little push, friend?"

Self-Unloading Trailers Reclaim Pulpwood

Early in 1957, Crandon Paper Mills, Inc., of Fort Madison, Ia., was faced with a problem of reclaiming pulpwood from the woodyard and transporting it to the mill. Their solution was self-unloading truck trailers which made ideal forwarding units for the company. The original model, designed and built by Carl Langenbach of Crandon Paper Mills and Harlan Miller of Mediapolis, Ia., was so successful and trouble-free that two more were built with minor modifications.

General Features

A truck tractor with a fifth-wheel unit supports the front end of each trailer. The rear of each trailer is an old truck rear-end with the frame cut off just ahead of the dual wheels. Welded to this are sections of Link-Belt chain conveyors, approximately 26 feet in length, used previously in the woodyard. These comprised the trailer beds. The distance between each of the conveyor chains measures about 52 inches. This width is very satisfactory for handling the 7-foot 6-inch pulpwood used by this company. The conveyor chain travels about 5 feet per minute and is powered by a 5-h.p., 900-r.p.m. electric motor. An electrical outlet and lead cord at the unloading ramp provide the necessary plug-in to the trailer conveyor's motor for the unloading operation. Wood drops from the trailer onto a multi-chain ramp that leads into the main mill conveyor.

Each trailer normally carries about 4 cords per trip and the two trailers can handle about 100 cords per 8 hours. Obviously their capacity for reclaiming pulpwood is much greater than this 100-cord volume.

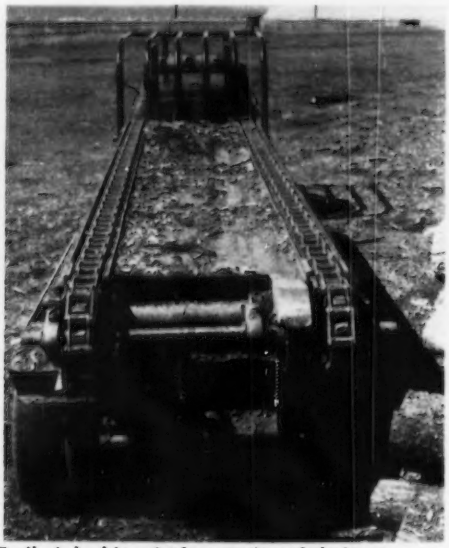
The trailers are loaded by crane and grapple and only one man is involved for operating all three units—the crane and the two trailers.

Comments

The self-unloading trailer represents an efficient unit for handling moderate volumes of pulpwood. Obviously its use is most effective for forwarding wood from stockpiles or storage to conveyors. With some modifications such a unit might be efficiently adapted to loading rail cars, trucks or other forms of pulpwood transport.

Condensed from Amer. Pulpwood Ass'n. Technical Release No. 59-R28. authored by J. S. Hensel, APA forest engineer.

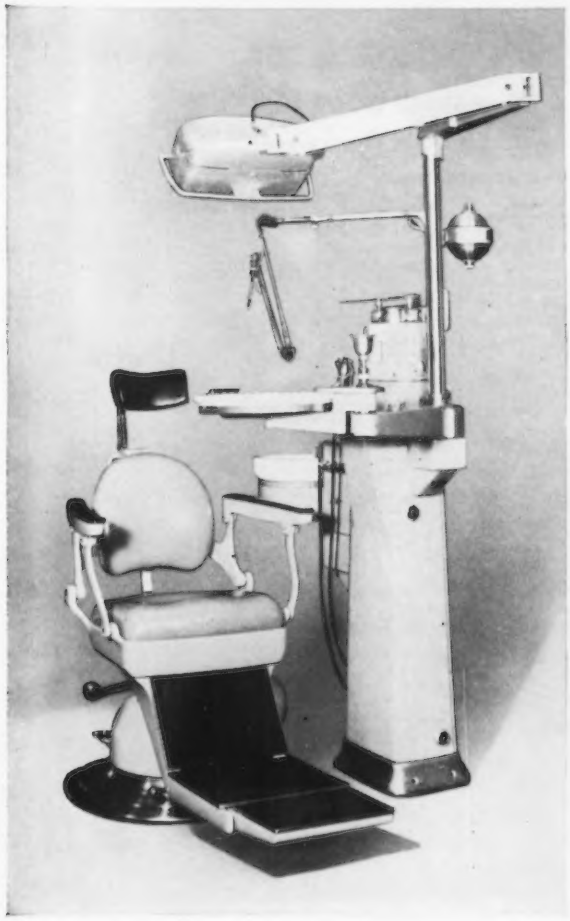
Self-unloading trailer on way to the unloading docks. Electric motor can be seen mounted at rear of trailer and under conveyor.



Trailer's bed is a 26-foot section of chain conveyor welded to the rear end of an old truck.

Sycamore logs received at Crandon. The editors note that these resemble museum pieces if the wood shown in the other photos is representative of average sizes.

From two unloading docks, wood drops into main mill conveyor which runs from left to right.



DESIGNED BY VLADIMIR KAGAN FOR KAGAN-DREYFUSS, INC.

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Kraft, Unbl.	117.50/125.00	125.00/130.00	†125.00/130.00	125.00/ —	
Sulphite, Blchd.	155.00/ —	155.00/ —	*155.00/ —	*155.00/ —	155.00/ —
Sulphite, Bl. Hdwd.	150.00/ —				
Sulphite, Unblchd	135.00/ —	135.00/ —	†135.00/ —	*135.00/ —	
Sulphite, Unb'l. Gl'sn		140.00/ —	†134.00/ —		
Soda, Blchd.	147.00/150.00	150.00/ —			

§ On Dock Atlantic Ports. * Freight allowed. † Varying Freight Allowances

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3	7.25/6.00	$7.50/7.00	6.75/6.50	7.00
4	6.00/5.25	6.25/5.75	6.25/5.25	6.50/6.25
5	5.25/4.75	5.25/4.75	4.75/4.50	5.75
6	4.75/3.50	4.50/4.25	4.00/3.25	3.50
7	3.50/2.50	4.00/3.00	3.00/2.75	3.00/2.50

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	Aug. 31	Aug. 31	Sept.	Sept.
No. 1 Mixed Paper	$ 10.00/ 12.00	12.00/ 14.00	9.00/ —	15.00/ —
No. 1 News	17.00/ 18.00	17.00/ 18.00	16.00/ —	17.00/ —
Overissue News (Lg. size)	16.00/ 18.00	15.00/ 17.00	21.00/ —	20.00/ —
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Super Resorted Kraft Paper	35.00/ 40.00	— / —	35.00/ —	55.00/ —
New Double Kr. Ld. Corr. Cuts	35.00/ 37.50	37.50/ —	37.50/ —	35.00/ —
(Semi-chem. medium)	47.50/ —	47.50/ —	45.00/ —	36.00/ —
New 100% Kraft Corr. Cuts	40.00/ 42.50	— / —	57.50/ —	— / —
New Br. Kraft, Env. Cuts	70.00/ 75.00	70.00/ 75.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Prntd.	55.00/ 60.00	55.00/ 60.00	52.50/ —	55.00/ —
New Br. Kr. Bag Waste Unprintd	60.00/ 65.00	65.00/ 75.00	60.00/ —	60.00/ —
No. 1 Groundwood Shvs.	25.00/ 30.00	25.00/ 30.00	24.00/ —	35.00/ —
White Newsblanks	65.00/ 70.00	53.50/ 60.00	45.00/ —	60.00/ —
No. 1 Soft White Shvs.	60.00/ 65.00	60.00/ 65.00	60.00/ —	70.00/ —
Super Soft White Shvs.	65.00/ 75.00	75.00/ 85.00	70.00/ —	— / —
Hd. White Shvs.	85.00/ 90.00	90.00/100.00	85.00/ —	95.00/ —
Hd. White Env. Cuts	100.00/105.00	105.00/110.00	90.00/ —	113.00/ —
Col. Tab. Cards	55.00/ 57.50	55.00/ 57.50	52.50/ —	45.00/ —
Manila Tab. Cards	77.50/ 80.00	77.50/ 80.00	75.00/ —	80.00/ —
No. 1 Col. Ledger	40.00/ 45.00	37.50/ 42.50	47.50/ —	35.00/ —
White Ledger	60.00/ 62.50	60.00/ 65.00	57.50/ —	55.00/ —
Mixed Book & Mag.†	25.00/ 28.00	— / —	17.00/ —	— / —
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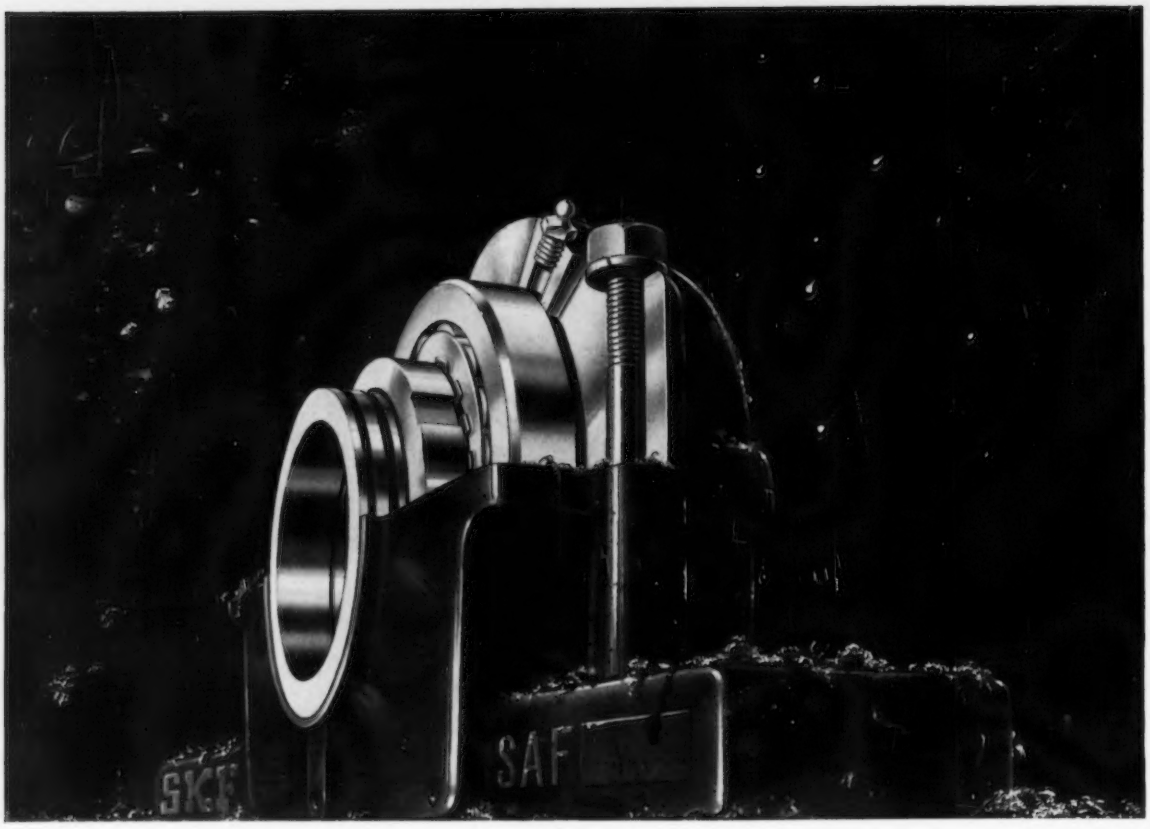

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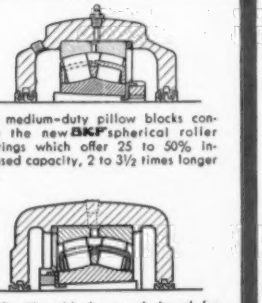

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You may wish to check certain items in this advertisement and forward to those concerned in your company.

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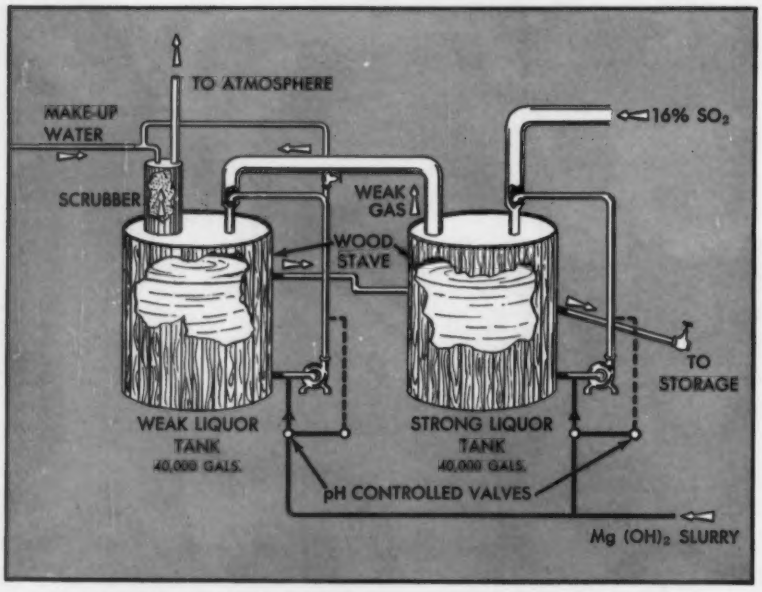

Liquor make-up for the Magnefite Process can utilize much of the equipment formerly used in older sulfite processes. Up to 90% recovery is simply accomplished.

A Canadian company has applied for patents on a recently developed modification of the soluble base magnesium process which is called "Magnefite", a name derived from "magnesium" and "bisulfite". This new process already has been proved on a commercial scale to offer several advantages including simplified liquor make-up (see drawing), pulping of mixed species, increased digester capacity, and lower heat requirements.

Up to 90% recovery is accomplished with a simplified recovery system, yet excellent pulp at comparatively high brightness and yield is obtained. Because it uses high combined and low free SO_2 in the cooking liquor, two hitherto costly operations are eliminated—using pressure storage vessels for the liquor and relieving the digester of large quantities of SO_2 gas. Greater heat savings are realized by eliminating the need for cold water in the liquor make-up. With a much shorter penetration period, continuous and semi-chemical pulping with magnesium base sulfite is now economically feasible.

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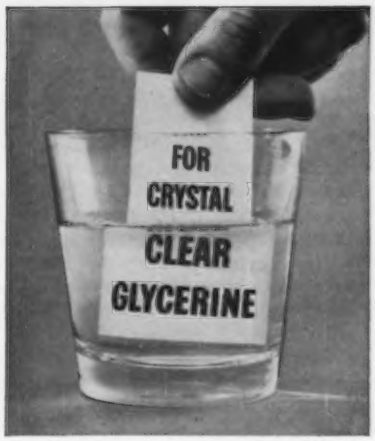
Dow's three grades of glycerine—synthetic, U.S.P. and U.S.P. 99.5%—are sold as plasticizers for glassine papers on the basis of purity alone. And a glance at the rapid rise in the sales chart for Dow glycerine shows that many paper mills maintain a sharp watch for purity. Just as glycerine ranks high as a plasticizer in glassine papers, so the three grades of glycerine offered by Dow are second to none for purity and clarity.

Glycerine from Dow offers many valuable benefits for paper makers. It stays free from objectionable color and odor almost indefinitely. Along with its stability, other talents pressed into service in varying combinations include its hygroscopicity, low volatility, solvent power and solubility, high viscosity, noncrystallinity, low toxicity and compatibility with other materials.

The three high quality grades of glycerine are now being produced in abundant quantities at Dow's big Freeport, Texas plant. Dow customers receive glycerine shipments promptly from five strategically located bulk stock points. These are located at Bayonne, New Jersey; Chicago, Illinois; Freeport, Texas; Oakland and Torrance, California.



Dow glycerine offers the paper industry consistent quality in three grades: synthetic, U.S.P. and U.S.P. 99.5%.

Dow is well aware of the need for more studies on glycerine with respect to its use in the pulp and paper industry. And a development program is now under way in Dow laboratories.

DOWICIDE . . .

lethal enemy of mold and mildew

As a rule, discoloration and odor in stored pulp can be traced to mold and mildew. Fortunately this damage can be retarded, even prevented, by spraying a water solution of Dowicide® G (pentachlorophenol, sodium salt, monohydrate) upon the fiber mat before the final processing. A ton of lap stock, either chemical or ground wood, is completely protected from black or blue mold growth with only 2 to 4 pounds of Dowicide G. With pulp slush, satisfactory storage is obtained for 5 to 7 days when Dowicide G is applied at the concentration of 0.2-0.25 percent, based on dry weight.

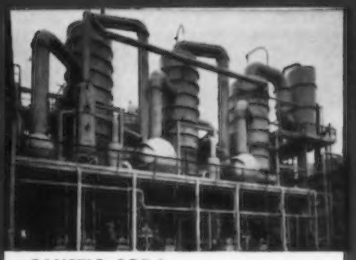
In the field of paper makers' felts it has been determined that preservation during periods of idleness, when biological degradation occurs most rapidly, may be obtained by applying 2 pounds of Dowicide G in 50 gallons of water on the entering side of the press until the felt is treated.

★ ★ ★ ★

DOW IS AN AUTHORITATIVE SOURCE for information about chemicals that improve processes and shave production costs in the pulp and paper industry, as well as for the chemicals themselves. Write THE DOW CHEMICAL COMPANY, Midland, Michigan, Chemicals Merchandising Department 944DP-7.

DOW CHEMICALS . . .

four more for the paper industry



CAUSTIC SODA

Dow recently opened a new producing plant at Plaquemine, La., bringing to five the number of plants which assure dependable supply and prompt delivery of caustic soda.

PENTACHLOROPHENOL

New 12 page booklet—"Low-Cost Pole Buildings for Industry"—describes in detail low costs and long lasting benefits of penta-treated pole buildings. Write for copy today!

METHOCEL

Mills are turning to Methocel® 90HG, Dow's new high temperature stable gum, available in viscosities ranging from 100 to 15,000 cps. Mills report improved gloss ink hold out for better printing qualities.

DOWTHERM

Looking for a better way to process at high temperatures? Then consider Dowtherm®, Dow's high-temperature, low pressure organic heat transfer medium. New booklet gives complete story.

DOW CHEMICALS BASIC TO THE PULP AND PAPER INDUSTRY

Chemical Raw Materials
Pulping and Bleaching Chemicals
Preservatives • Plasticizers
Glycols and Derivatives
Methylcellulose • Emulsifiers
Solvents • Aromatics
Caustic Soda • Muriatic Acid
Chlorine • Soda Ash
Separan®NP10

THE DOW CHEMICAL COMPANY
Midland, Michigan

DOW

NEWS OF SUPPLIERS

L. E. Stanton

R. W. Williams

J. Platner

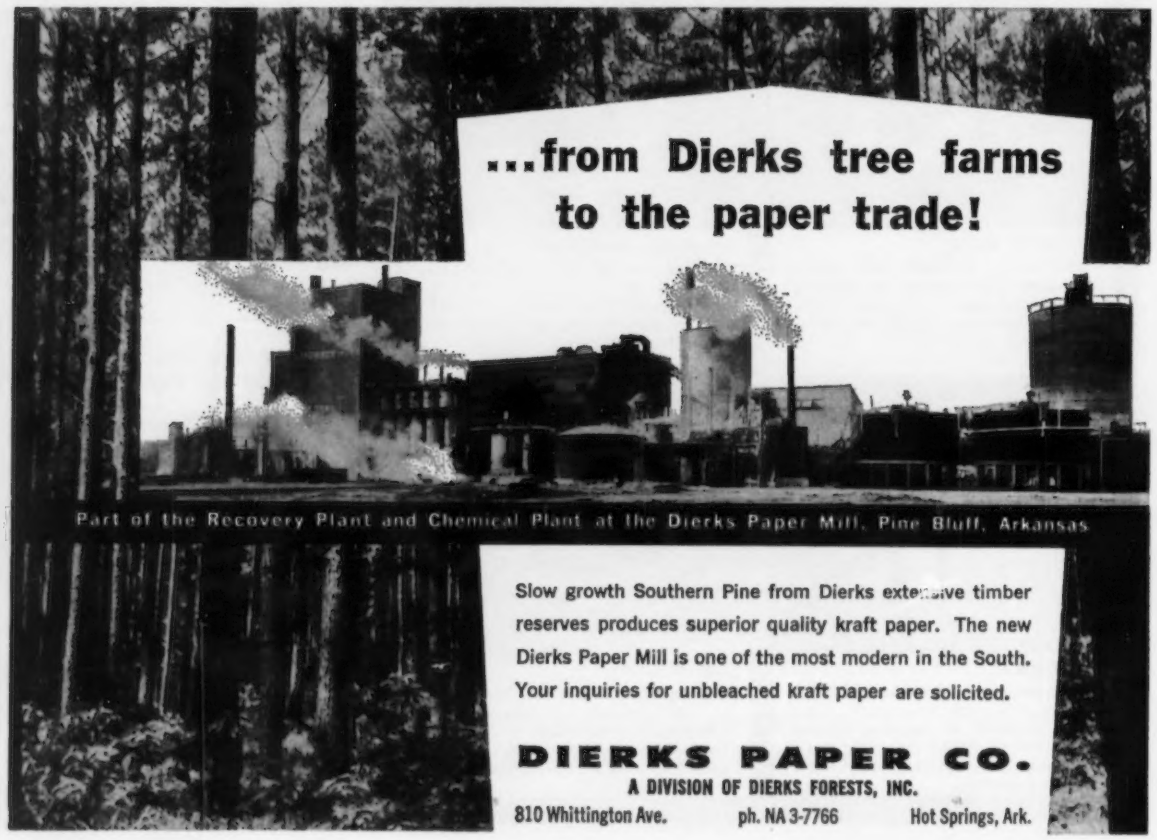
J. D. Hunter

Goodyear Tire & Rubber Co., Akron, Ohio, announces a major realignment in the field sales organization of its Chemical Division. Those affected by the changes include L. E. Stanton, R. W. Williams, J. Platner and J. D. Hunter. Following closely the creation of two new sales departments within the division, these shifts were made to continue and expand the Chemical Division's sales representation in all of the nation's major market areas.

Mr. Stanton, former district manager at Houston, has been transferred to Detroit as district manager, replacing L. P. Thies who recently was named manager of the new Polyester products department. In his new post, he will be responsible for sales in the Detroit area and parts of Canada. Coming to Goodyear in 1954 with previous experience in the rubber and chemical industries, Mr. Stanton was assigned to Houston as special representative and appointed district manager there in 1958. He received a bachelor of science degree in chemistry from Elmhurst College in Illinois.

Mr. Williams, former senior sales representative on the West Coast, has been appointed West Coast district manager. In this position, he will headquarter at Portland and also maintain offices in Los Angeles and San Francisco. Mr. Williams joined the Goodyear Chemical Division in 1953 as a special representative and was transferred to the Portland office soon after. He attended Reed College in Portland and before joining Goodyear was a chemical engineer in the lumber industry in Washington.

Mr. Platner, former senior sales engineer in the rubber and rubber chemicals department, has been appointed district manager at Houston, replacing Mr. Stanton. Mr. Platner joined Goodyear in 1947, was assigned to the Research Division in 1948 and the Chemical Division in 1953, and was senior sales engineer in the coatings department until being transferred to rubber and rubber chemicals department early this year. He graduated from Heidelberg


...from Dierks tree farms to the paper trade!
Part of the Recovery Plant and Chemical Plant at the Dierks Paper Mill, Pine Bluff, Arkansas
Slow growth Southern Pine from Dierks extensive timber reserves produces superior quality kraft paper. The new Dierks Paper Mill is one of the most modern in the South. Your inquiries for unbleached kraft paper are solicited.
DIERKS PAPER CO.
A DIVISION OF DIERKS FORESTS, INC.
810 Whittington Ave. ph. NA 3-7766 Hot Springs, Ark.

College with a B.S. in chemistry and received an M.A. from University of Akron.

Mr. Hunter, former senior sales representative in the division's Chicago office, has been transferred to the St. Louis office as district manager. He replaces W. E. Kelly who recently was named manager of the division's new adhesives department. Mr. Hunter has been with the company since 1953 when he was assigned to the Chicago district. He was graduated from Notre Dame University with a B.S. in chemistry.

V. P. Owens

E. L. Smith

Combustion Engineering, Inc., has announced the appointment of Vincent P. Owens as assistant general sales manager in charge of industrial products. For the past ten years Mr. Owens has been manager of paper mill equipment sales. He will continue to supervise the company's Paper Mill Division sales in addition to sales of industrial steam generators, Raymond Division equipment and fabricated products. Mr. Owens has been continuously active in paper mill circles since joining the Combustion organization in 1936.

A mechanical engineering graduate of New York University, Mr. Owens is a member of TAPPI and ASME and is currently secretary of the TAPPI engineering division.

As successor to Mr. Owens, E. L. Smith has been appointed manager of paper mill equipment sales.

Joseph T. Ryerson & Son, Inc., Houston, Tex., announces the following appointments.

Allan F. Eggleton has been named manager of sales of alloy, stainless, cold finished carbon bar, and tubular steel.

Appointed to sales districts in the city of Houston are field representatives Frank T. Elmgren and James L. Robb. Assigned to the east Texas and Louisiana sales district is salesman Russell D. Evans.

A metallurgical engineering graduate of the University of Minnesota, Mr. Eggleton was employed as assistant metallurgist at Allis-Chalmers Mfg. Co., Milwaukee, Wis., prior to joining Ryerson in a sales capacity in 1946. After three years in inside sales work he was named a field representative, specializing in the sale of alloy and stainless steels.

Mr. Elmgren attended Oregon State College and Northwestern University. Since joining Ryerson more than five years ago he has been engaged in sales work.

A native of Texas, Mr. Robb attended Southern Methodist University and North Texas State College. He has been in the steel business a number of years, his background including extensive experience in the sale of stainless steel. He has been with Ryerson and its predecessor company since 1957.

General Aniline & Film Corp., Dyestuff and Chemical Division, has named Edward R. Heintz manager, dyestuff industry sales, and Otto F. Habel product line manager, Vat Dyestuffs.

A graduate of Drexel Institute in 1920, Mr. Heintz has been associated with General Aniline & Film Corp. for 29 years. During most of this time he has been active in dye and

The Pyrazol Fast range of Sandoz Directs is outstanding in fastness to light . . . outstanding in the other important properties as well . . . and is the prime choice in the coloring of nearly all grades of paper, from tissue to cover. For the booklet, complete with illustrations, that tells you all about Pyrazol Fast—write, wire, or 'phone: SANDOZ, INC. 61-63 Van Dam St., New York 13, New York. ALgonquin 5-1700. District Offices: Charlotte, Cincinnati, Fair Lawn, N. J., Hudson, Mass., Los Angeles, Philadelphia.

SANDOZ
THINKS AHEAD WITH PAPER
SANDOZ

pigment sales in many locations throughout the country. Prior to his new appointment, he was product line manager, vat colors, and has also served as manager of both the Chicago and Philadelphia branch offices.

Mr. Habel joined the dyestuff division over 30 years ago after completing his studies at Pratt Institute. During this time he has acquired extensive experience both here and abroad in all phases of dyestuff application. Prior to his new appointment, he was assistant technical manager, marketing department, Dyestuff and Chemical Division.

CHAS. T. MAIN, INC.

ENGINEERS

PROCESS STUDIES, DESIGN, SPECIFICATIONS, CONSTRUCTION SUPERVISION

PULP AND PAPER MILLS

STEAM, HYDRAULIC AND ELECTRICAL ENGINEERING . REPORTS, CONSULTATION, VALUATIONS

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Specializing since 1923 in all phases of design, modernization and expansion of pulp and paper mills from forest to finished product.

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Figures of the Week

PAPER PRODUCTION RATIO REPORT—American Paper & Pulp Assn. Figures

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	July 25	Aug. 1	Aug. 8	Aug. 15	Aug. 22
1959	95.0r	94.1r	95.6r	96.3r	94.5
	July 26	Aug. 2	Aug. 9	Aug. 16	Aug. 23
1958	88.0	89.1	89.3	91.0	90.0

r Revised.

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	87.8	90.5	93.2	94.4‡	95.5‡	95.0‡	84.1‡	—	—	—	—	—	—
1958	86.9	89.5	89.5	88.4	87.2	87.2	75.3	89.6	86.5	91.6	90.4	83.1	87.1

‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1952	1953	1954	1955	1956	1957	1958	1959
Year to Date	91.4	92.8	91.6	94.9	98.9	91.7	85.7	91.5
Year Average	88.6	92.3	91.6	94.0	97.9	90.9	87.1	—

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available.

PAPERBOARD OPERATING RATIOS†—National Paperboard Assn. Figures

COMPARATIVE WEEKLY SUMMARIES

	July 25	Aug. 1	Aug. 8	Aug. 15	Aug. 22
1959	94	98	98	96	95
	July 26	Aug. 2	Aug. 9	Aug. 16	Aug. 23
1958	93	93	92	93	92

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1959	86	89	94	93	95	95	83	—	—	—	—	—	—
1958	84	86	87	84	85	86	76	93	90	95	93	77	86

† *Per cents of operation based on "inch-hours" reported on a 6-day basis to the National Paperboard Association.*

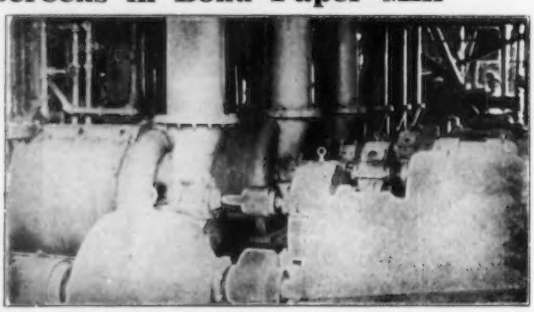
SUMMARY OF PAPERBOARD STATISTICS—National Paperboard Assn. Figures

ITEM	THIS WEEK ENDING Aug. 22, 1959	LAST WEEK ENDING Aug. 15, 1959	CUMULATIVE TO DATE Jan. 1 to Aug. 22, 1959 incl.
% Activity	95%	96%	92%
TOTAL	320,743	325,729	10,127,836
Liner	113,475	111,840	3,486,448
Corrugating Material	47,585	50,623	1,541,996
Chip & Filler Board	5,660	5,042	169,952
Total Containerboard	166,720	167,505	5,198,396
Folding	55,774	57,695	1,841,417
Set-Up	13,454	13,113	383,063
Special Food Board	24,856	30,327	930,885
Other	59,939	57,689	1,774,075
Total Boxboard	154,023	158,224	4,929,440
Total Orders			
Received	299,462	298,923	
Unfilled End of Week	511,267	551,214	

Three APMEWS Replaced a Big Room Full of Flat Screens in Bond Paper Mill

"Apmew centrifugal pulp cleaners & screens have now been installed and are working very satisfactorily." Centrifugally cleaner, more salable paper is being produced for big profits.

Occupy 10 feet by 30 feet—SAVE 81 feet by 96 feet



APMEW, Inc., P. O. Box 1, Glens Falls, N. Y.

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Keep your eye on our Classified Advertising Section

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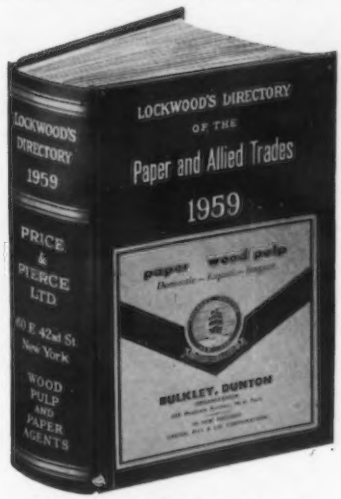

REGULAR EDITION 1488 PAGES

PULP AND PAPER MILLS
UNITED STATES AND CANADA
Company, Officers and Operating Executives in geographic order.
Itemized to show whether Paper—Ground Wood—Sulphite Pulp—Sulphate Pulp—Soda Pulp—Semi-Chemical Pulp, etc.
Products manufactured. Total production.
Mill Equipment and kind of power used.
Shipping point, railroad siding, post office, nearest bank, money order and telegraph office, Bus lines, Airport. Telephone, Highways, U. S. and State route numbers. In Canada: Kings and Provincial route numbers.
State and Provincial Maps keyed to indicate number of Pulp and Paper Mills in each City or Town.

MILL OFFICIALS
An alphabetical list of officers and operating executives.

LISTS OF NEW AND IDLE MILLS
CLASSIFIED SECTION
Products of pulp and paper mills and converters of paper and cardboard products.

CITY ADDRESSES
street addresses of U. S. and Canadian pulp and paper mills maintaining city offices.

PULP AND PAPER MILLS
IN LATIN AMERICA AND PHILIPPINE ISLANDS

CLASSIFIED LIST OF EQUIPMENT
AND SUPPLIES

CONVERTERS
of paper, board, moulded pulp, etc.

GENERAL PAPER MERCHANTS—
Geographically arranged and keyed.

PAPER EXPORTERS AND IMPORTERS
Geographically arranged.

RAGS AND PAPER STOCK DEALERS
Keyed to show stocks handled. Importers included.

RAGS AND PAPER STOCK CONSUMED
Kind and grade consumed by the mills.

PULP TESTERS

STATISTICAL TABLE

TRADE ASSOCIATIONS

WATERMARKS AND BRANDS—
Used in the American paper trade.

WOOD PULP TESTERS—
Importers and Exporters.

TRAVELER'S EDITION 369 PAGES

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Small edition including ONLY the complete reports of the Pulp and Paper mills,

as given in the regular edition of the Directory.

State and Provincial Maps keyed to indicate number of Pulp and Paper Mills in each City or Town.

Alphabetical mill index.
List of mill officials and executives.
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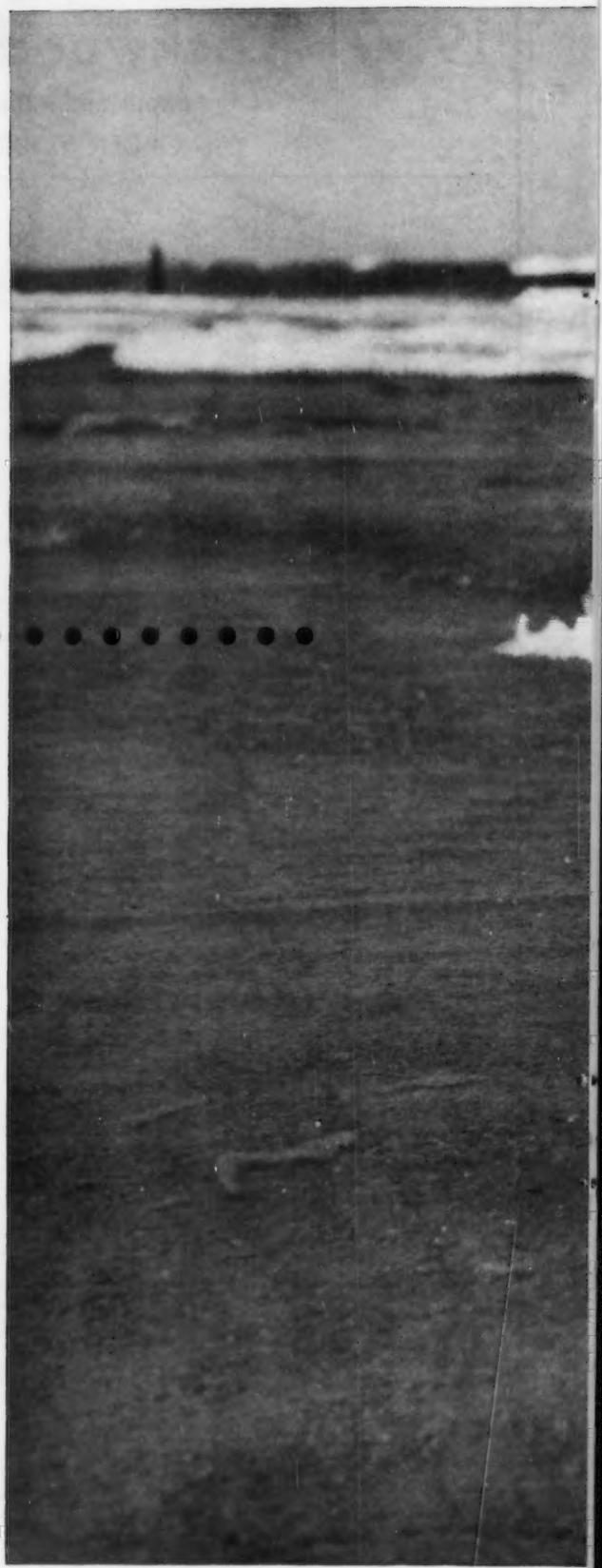


Foam is fun.....

but not for paper coaters

Koppers has just developed DYLEX® K-54 latex for paper coaters—a brand new latex, when agitated, produces a minimum of foam which dissipates at a rapid rate. A critical series of tests between DYLEX K-54 and other competitive latices has proved this conclusively.

And that's not all, DYLEX K-54 offers *improved pick resistance*, whether in combination with starch or casein. What's more, clay coatings made with DYLEX K-54 have a higher degree of smoothness and excellent mechanical stability.

Want the complete story? Then read our new detailed pamphlet on DYLEX K-54—complete with charts and test data. Write Koppers Company, Inc., Plastics Division, Dept. PT-99, Pittsburgh 19, Pennsylvania.

Offices in Principal Cities · In Canada:
Dominion Anilines and Chemicals Ltd., Toronto, Ontario

KOPPERS PLASTICS

KOPPERS

ACCURACY BEGINS HERE..... and goes ON... ...and ON.. ...and ON.. ...and ON.. ...and ON.. ...and ON.. ...and ON.. ...and ON.. ...and ON..

Accuracy begins with the diamond-shaped orifice of DeZurik Vee Port Control Valves. Because it retains the same shape throughout the control range, the orifice will never plug or pack with stock. Eccentric action eliminates friction between the plug and the body assuring smooth, sure control.

The actuator on DeZurik Control Valves responds instantly, reacting to minute variations in signal. The characterizing feature of the positioner will produce almost any desired throttling characteristic simply by changing the cam in the positioner.

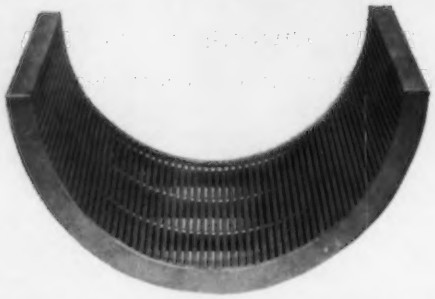
For accuracy *where* you want it—*when* you need it—specify DeZurik Vee Port Control Valves.

For more information on DeZurik Control Valves write to

DeZURIK CORPORATION
SARTELL, MINNESOTA

REDUCE BLINDING

raise paper and pulp production



Hendrick Wedge Slot is made with small openings to assure fine screening. Yet, the special Wedge Slot construction affords far greater draining and screening capacity than many other types.

Here's another big plus: Wedge Slot's profile bars are "precision shaped" to maintain uniform width of slot openings the entire length of the screen as wear progresses.

To find out more about these special features of Hendrick Wedge Slot, write today.

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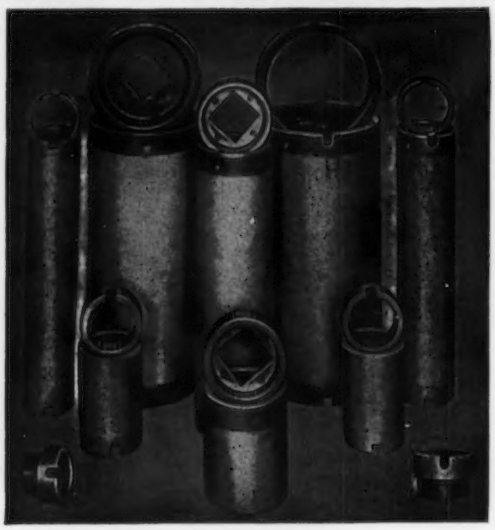
Perforated Metal • Perforated Metal Screens • Wedge-Slot Screens • Hendrick Wedge Wire Screens • Architectural Grilles • Miteo Open Steel Flooring—Shur-Site Treads • Armorgrids • Hydro Dehazers • Distillation Column Internals.



ELIXMAN CORES CAPS

Straight wound paper cores made in sizes from 2" to 10" inside diameter with any thickness wall required.

Long draw protected slot caps of heavy gauge steel in all standard sizes.

Heavy duty caps with reenforced square hole. This patented feature of reenforcement gives added strength and durability.

Samples of caps or cores will be gladly submitted

ELIXMAN PAPER CORE COMPANY, INC.
CORINTH, N. Y.

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CLEARING HOUSE

Help Wanted

PAPER MEN

$5,000 to $50,000

SALES • PRODUCTION • TECHNICAL

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Paper men ourselves, and the only recognized professional specialists in the world in our particular field, we assist responsible paper men to accelerate their careers by uncovering and developing THE SPECIFIC SITUATION that most exactly fits the needs of each individual we serve.

If you seek to better yourself, and your performance to date entitles you to our endorsement, we can and will help you. Contact us in absolute confidence for information regarding procedure.

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PERSONNEL CONSULTANTS TO THE PULP, PAPER & ALLIED INDUSTRIES
6 East Monroe, Chicago ANdover 3-1970

ENGINEER EXPERIENCED IN PAPER STOCK PREPARATION

Wanted for immediate sales and service engineering position leading to executive responsibilties.

Solid background in paper making is essential. Sales experience highly desirable. Salary dependent on experience and past achievements.

Reply with full resume to:

Manager of Sales
Shartle Division
The Black-Clawson Company
Middletown, Ohio

S-7

SYSTEMS ENGINEER

Young Engineer, paper mill experience preferred or a knowledge of steam and control systems to assist in design and specifications and train for Sales Engineering. Requires some travel. We are a division of a potential growth corporation. Located in Ohio. Submit resume to Box 254 care Paper Trade Journal.

S-7

Help Wanted *Help Wanted*

ENGINEERS AND DRAFTSMEN

MECHANICAL ENGINEERING SUPERVISOR

Graduate Mechanical Engineer to age 40 to serve in supervisory capacity in process piping, heating, ventilation, and mechanical design work. Paper mill experience required, with previous supervisory experience desirable. Must have ability to deal effectively with others.

PAPER MILL ENGINEER

Graduate Mechanical Engineer to age 40 with at least five years experience in paper mill design or maintenance.

CHEMICAL ENGINEER

Graduate Chemical Engineer to age 40, with experience in sulphite pulp process. Experience in sulphate pulp and by-product recovery processes desirable but not essential.

POWER PLANT ENGINEER

Graduate Mechanical or Electrical Engineer to age 40 for power plant design and selection of equipment. Experience with turbo-generators and recovery equipment desirable.

GRADUATE ENGINEERS TO AGE 35 ALSO WANTED WITH AT LEAST TWO YEARS EXPERIENCE IN ELECTRICAL, PIPING OR STRUCTURAL DESIGN.

DRAFTSMEN

High School graduates or better for structural, mechanical, electrical, or piping layout. Age to 35 with minimum of three years experience.

These positions provide long-term opportunities. Company is located in eastern Tennessee, in the heart of the beautiful Tennessee Valley. Excellent recreational and residential facilities throughout the area. Very favorable year round climate. Located near Great Smoky Mountains, and short distance from Chattanooga and Knoxville, Tennessee and Atlanta, Georgia. Liberal salary program with periodic merit increases. Complete insurance, retirement and vacation programs are established. All applications will be treated in confidence. Interviews will be conducted in areas of qualified applicants, or selected candidates may be asked to visit offices at Company expense.

Reply immediately, submitting summary of experience and qualifications to:

BOWATERS
ENGINEERING AND DEVELOPMENT INC.
INDUSTRIAL RELATIONS DEPARTMENT
CALHOUN, TENNESSEE

TF

ENGINEER

ChE or M.E.

Expansion of our engineering department creates opening for an engineer with fiberboard or pulp and paper experience to assist supervising project engineer in all phases of engineering on insulation board and similar products. Work will include cost estimates for new plants, design, plant problems, etc. Position requires a person with initiative, imagination and the ability to get things done. Some travel will be required. Plant operating or maintenance experience helpful, but not essential.

Apply Personnel Dept., Room 425

Barrett Division
ALLIED
CHEMICAL CORP.
40 Rector St., New York, N. Y.

S-7

INDUSTRIAL ENGINEER

Integrated Southern Kraft Mill has interesting and challenging position open for qualified Industrial Engineer. Require degree in Industrial Engineering and minimum of 5 years experience IN THE PAPER INDUSTRY including factory planning, space layout, materials handling. Experience in accumulating and evaluating manufacturing cost data also helpful. All replies treated completely confidential. Submit complete resume and snapshot to Box 59-219 care Paper Trade Journal.

N.C.

Well known and established manufacturer of item of machine clothing has openings for two salesmen—one in Mid-West Territory and one in Southern Territory. Excellent opportunities for right men. Reply to Box 59-251 care Paper Trade Journal.

8-14

DESIGN ENGINEER

The rapidly expanding requirements of our Engineering Department require the addition of design engineers of proven capability. The men we seek may be familiar with papermachine design or not, but they must have experience in heavy machinery. They must have imagination and creative ability. They must be willing to work on the board sufficiently to ***so finalize their layouts*** that the job can be finished by detailers. They may also be papermachine specialists with a concentration of experience in one or more sections of the papermachine. They must have leadership qualities to assume increasing responsibility in a growing organization.

Reply with resume and present salary to Personnel Director, Valley Iron Works Company, Appleton, Wisconsin. S-14

MANAGEMENT OPPORTUNITIES IN NEW BRITISH COLUMBIA PULP MILL

Celgar Limited has commenced construction of a new 500 ton Bleached Kraft Pulp Mill in South-Eastern British Columbia.

Two Senior positions to be filled immediately are ASSISTANT PULP MILL MANAGER and OPERATING SUPERINTENDENT.

The Assistant Manager is to carry responsibility for Production, Engineering, Maintenance, Mill Stores and Yard Operations, reporting to the Pulp Mill Manager.

The Operating Superintendent will be responsible for Wood Preparation, Cooking, Bleaching, Drying, Shipping, Steam and Recovery Operations, reporting to the Assistant Manager.

Here is an unusual opportunity to participate in the construction and operation of a modern mill, as well as to reside in an ideal location.

Letters of application should contain full details of background and experience as a basis for arranging personal interviews. If requested, your contact with us will be retained in confidence.

Write To: Mr. L. S. McGill,
Celgar Limited,
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Vancouver 5, B. C.

S-7

BARGAINS

IMMEDIATE DELIVERY

1—86" Farrel 8-Roll Calender Stack. A. F. Bearings. Full set of Doctors.
1—8" Pusey & Jones 7-Roll Calender Stack.
1—30" Dia. x 130" Face Farrel Roll Grinder., Complete.
1—5' x 86" Pusey & Jones Yankee Dryer.
1—92" Langston Winder equipped with both score and shear cut slitter devices.
1—86" Warren Winder Complete. Recently rebuilt with new drums and new A. F. Bearings and Housings.
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3—73″ face w/gears & bearings
3—76″ face w/gears & bearings
3—77″ face w/gears & bearings
2—84″ face
2—84″ face w/accessories
1—160″ face w/rope carriers
36″ Dia.:
1—42″ face
2—44″ face
2—46″ face
22—54″ face; complete section
4—70″ face w/gears & bearings
11—72″ face w/gears & bearings
1—74″ face Lukenweld w/A-F Brng
1—74″ face w/gears & bearings
3—75″ face w/gears & bearings
9—76″ face w/gears & bearings
1—77″ face w/gears & bearings
1—78″ face w/gears & bearings
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1—110″ face
40—118″ face; complete section
1—120″ face
1—160″ face
48″ Dia.:
58—46″ face; chrome plated
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1—82″ face w/gears & bearings
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10—123″ face w/gears, frames & bearings
1—128″ face

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JORDANS

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1—350 hp GE; 2200 v; 720 rpm; Synch

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1—MDC 1500 g.p.m. 40 ft. head

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1—100″ Kohler automatic two arm unwind reel; 60″ dia rolls; new condition
1—116″ Downingtown two bowl A/F Brngs
1—123″ Beloit—2 bowl
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2—#1 Claflin; A-F Brng
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1—F24 Bauer w/50 h.p. motor

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1—80″ B-C heavy duty board model
1—157″ Masson-Scott; like new

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2—84″ Hamblet w/layboys and backstands
1—105″ Hamblet
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2—42″ Cameron Model 6; 24″ dia rewind
2—48″ Langston duplex; 24″ dia rewind
2—52″ Cameron Model 6; 24″ dia rewind
1—60″ Hudson-Sharp; plastic coated paper
1—60″ Langston; shear cut; 30″ dia rewind
1—60″ Kidder Model SH; 40″ rewind
1—62″ Cameron Model 8; 24″ dia rewind
1—62″ Cameron Model 6; 30″ dia rewind
1—62″ Cameron Model 8; 36″ dia rewind
1—70″ Center Winder w/variable speed motor
1—72″ Johnston; 36″ rewind; like new
1—72″ Cameron Model 26-3A duplex
1—72″ Beloit shear cut; 40″ dia rewind
1—72″ Hudson-Sharp high speed automatic
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1—136″ Cameron Model 18; 42″ rewind
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1—148″ Langston shear cut; A-F Brng; 60″ dia rewind
1—194″ Cameron Model 19; A-F Brng
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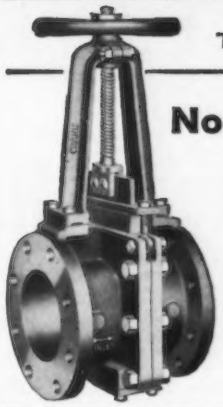

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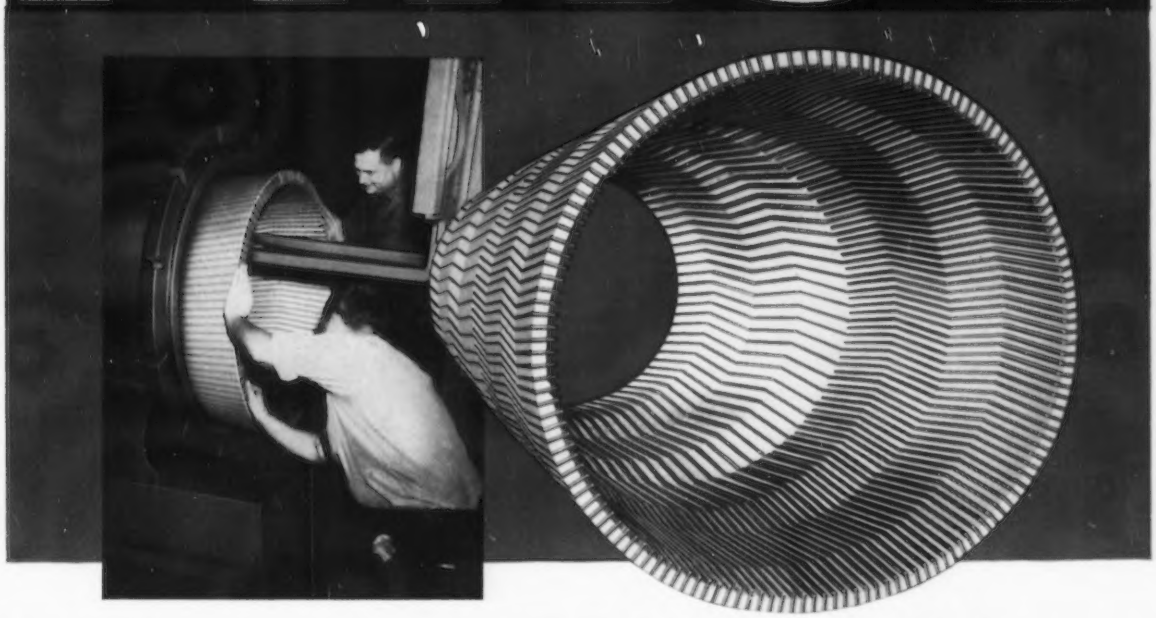

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